

# Machinery

A JOURNAL OF METAL-WORKING PRACTICE AND MACHINE TOOLS

DE BATH PUBLIC LIBRARY

APR 20 1963 *Re*

TECHNOLOGY & SCIENCE

VOLUME 101

July to December, 1962

THE MACHINERY PUBLISHING COMPANY, LTD.

*Editorial Office:*

CLIFTON HOUSE, 83-117 EUSTON ROAD, LONDON, N.W.1  
Telephone: EUSton 8441 (4 lines) Telegrams: Machtool, Norwest, London

*Head Office:*

NATIONAL HOUSE, 21 WEST STREET, BRIGHTON 1  
Telephone: Brighton 27356 (4 lines) Telegrams: Machtool, Brighton

# INDEX TO MACHINERY

## VOLUME 101

ITEMS MARKED \* ARE PATENT SPECIFICATIONS.

A	PAGE		PAGE		PAGE
A.C. Spark Plug Division, General Motors Corporation:		Air-operated Machine for Piercing Four Cross-holes. Schrader Automatic .....	812	Alvis, Ltd.:	
Casting Characteristics of Zinc, Aluminum and Magnesium ...	1256	Air-operated Platen Press. "Automatic Equipment" .....	1108	Set-up on Herbert No. 8 Preoptive Lathe for Turning Gas Turbine Components ...	360
A.E.G. Television Camera for Very High Temperature ...	86	Air-operated Press. J. & S. Braunstone .....	681	Amar Accuread Micrometer Height Gauge .....	782
AEI/Hotpoint, Ltd.:		Air-operated Transportable Conveyor. Udal Type MA-48-12 ...	705	Ambressey Engineering Co., Ltd.:	
Producing Washing Machines ...	1448	Air Valves. Martonair S.1600 Series Air Valves. Red Ring Multiple Manifold-type .....	1468	Screw Head Slotting Machine ...	1377
A.E.I. (See Associated Electrical Industries, Ltd.)		Aircraft. The Brazing of Stainless Steel Honeycomb Panels for ...	716	American Machine & Foundry Co.:	
A.P.V. Co., Ltd.:		Airworth Engineering Co.:		Automatic Milling Cutter Grinding Machine with Electrolytic Equipment ...	644
Large Aluminium Plates for a New Daphne Research Reactor ...	98	Bollard Chain-pulley ...	164	American Metal Products Co.:	
Acbars, Ltd. ...	309	Airflow Roll Form Corrugating Machine. Scotts ...	92	Production of an Axle Housing Incorporating Cold-extruded Sleeves ...	396
Accuracy. Advances in Machine Tool Accuracy of Industrial Measurement of Length and Diameter. Conference on the ...	235	Airmec, Ltd.:		American Optical Co.:	
Accuracy in the Operation of Large Machines. Arrangements for Improving ...	81	Production Line for Autocut Controls ...	1437	Experimental Welding with Lasers ...	1188
Accuratool Capstan Lathe with Programmes Control. Demonstration of Accured Micrometer Height Gauge. Amar ...	782	Airtech, Ltd.:		American Tool Works Co.:	
Ac-Gel Rust Remover ...	35	Application of Tungsten-Inert-gas Spot-welding Technique ...	720	Tape-controlled Centre Lathes ...	195
Acoustic Research Facilities at PERA. New ...	1105	Ajax Mfg. Co.:		Anderson Clyde Engineers Ltd.:	
Acdrive-22 Low-speed Hydraulic Motor. Cincinnati ...	813	Ajax Hogue Double-draft Wire Drawing Attachment ...	886	Cutlass Circular Sawing Machine Angle, Apton Cold-rolled Steel, for Cabinet Construction ...	707
Actuator. Kinetrol Air-operated ...	321	Akashi Servo-controlled Precision Gear Hobber ...	1474	Angle Cropping Machine. Kingsland Type D 50 Bar and ...	646
Adam Machine Equipment Ltd. ...	969	Al-Coat Corrosion-resisting Coating for Aluminium. Iridite No. 14E ...	715	Annealing Furnace. A Continuous ...	768
Adcock & Shipley, Ltd.:		Alean Industries, Ltd.:		Anout Engineering Co.:	
British-built Bridgeport Machine... Horizontal Milling Attachment for Bridgeport Machine ...	591	Norabryte Etching Process for Aluminium ...	1191	Electrolytic Equipment on Automatic Milling Cutter Grinding Machine ...	644
Addison Tool Co., Ltd. ...	194	Aldridge Layout Fixture for Preparing Enlarged-scale Drawings ...	695, 859	Electrolytic Machining by the Anocut Process ...	935
Adel Tool Co.:		Alexander, George, H., Machinery, Ltd.:		Anti-Dust Services, Ltd.:	
Hand-operated Nibbling Tool ...	40	Cutting Tests with DoALL Band-saw Blades ...	486	Treatment of Floors for Dust Collection ...	376
Aerojet-General Corporation:		See also 196, 371, 539, 555, 886		Apprentice School. MECO ...	738
Complex Missile Component Produced by Bandsawing ...	318	Allied Research Co., U.S.A.:		Apprentice Training School. Asquith Apton, Ltd.:	
Aeroplane & Motor Aluminium Castings, Ltd.:		Alloy, Fusible, Cores for Wave-guide Manufacture ...	1311	Cold-rolled Steel Angle for Cabinet Construction ...	707
Molten Metal Delivered by Road ...	1246	Alloys, Hard Facing, for Deposition by Gas and Arc Welding ...	855	Apwar, Ltd. ...	421
Aeroprojects, Inc.:		Alltools, Ltd., Futurmill Demonstration at ...	1082	Arboga Maskin AB:	
Ultra-sonic Tube Drawing ...	626	Almco Supersheen Division of Gt. Britain, Ltd.:		Type EST 830 Drilling Machine ...	981
Aggregatnik Type 5M 714 Gear Shaving Machine ...	148	Thru-Feed Barrelling Equipment ...	1066	Arc Plasma Spray-coating of Ferrous Surfaces ...	1126
Air, Compressed, Equipment. Norgren "Miniature" ...	1316	Vibrasheen Vibratory Finishing Machines ...	721	ARCH Computer System. Elliott-Automation ...	252, 1478
Air Cylinders. New Martonair ...	912	Alpha 100-ton Die Try-out Press ...	704	Archdale, James, & Co. Ltd.:	
Air Gap Gauge. Teddington Adjustable ...	1199	Alpina Universal Calculator ...	245	Co-ordinate Drilling Machine ...	496
Air Gauge Spindles made from Ferro-Tic C Machinable Carbide ...	1127	Aluminium Chips, Reclaiming, at a Transmission Factory ...	1287	Drill Testing Machine ...	953
Air Gauging Equipment for Relay Pole Pieces. Solex Cybermetric ...	416	Aluminium Coating. Improvement of Fatigue Strength by ...	241	High-speed Vertical Milling Machine Installed in the Works of High Speed Service Tool Co., Ltd. ...	579
Air Gauging. Symposium on ...	1083	Aluminium Foils, Ltd.:		Making a Film Sequence Concerned with an Automatic Vertical Ardrex No. 180 Metal Cleaning Fluid ...	1430
Air Grinders. Flexmaster Carbide Burrs and ...	516	New Aluminium Foil Pack for Ball Bearings ...	1060	Argall Machine Tool Co., Ltd. ...	649
Air-hydraulic Drilling Attachment for a Centre Lathe. Speedy & Eynon ...	180	Aluminium Laboratories, Ltd.:		Artes Synthetic Printing Rollers ...	149
Air- or Hydraulically-operated Clamps. Destaco ...	1203	Norabryte Etching Process for Aluminium ...	1191	Arco Automatic Wire Measuring, Cutting and Stripping Machine ...	306
Air-line Equipment. Efficient Methods for Batch Production of Norgren. 980, 1220		Spot-welding Aluminium by the Tungsten-Inert-gas Technique ...	720	Asbestos Pipes. Machine for Cutting Large-diameter ...	811
Airline Welding & Engineering Co.:		Aluminium Plates for a New Daphne Research Reactor. Large ...	98	Ashlow Automatic Packaging Machine ...	1076
Melt-through Welding Employed for the Production of Ribbed Rails Air Nip Pliers. Consolidated Pneumatic ...	266	Aluminium Sheet. Stainless Steel Clad ...	18	Asquith Electrics (Coins), Ltd.:	
Air-operated Actuator. Kinetrol ...	321	Aluminium Spot-welding, by the Tungsten-Inert-gas Technique ...	720	Motor Control Switch ...	415
Air-operated Compound Table. C.S. Carburetors Type K 500-1 ...	832	Aluminium Typewriter Frame s. Transfer Machining of Die Cast ...	901	Asquith Machine Tool Corporation, Ltd.:	
Air-operated Control Unit. Pryor ...	834	Aluminium Vessels. Forming One-piece Hollow ...	733	Apprentice Training School ...	849
Air-operated Drilling Units. Desauter ...	701	Aluminium, Zinc, and Magnesium. Casting Characteristics of ...	1256	Assembling of Electrical Equipment. Automatic ...	28
Air-operated Gauging Machine. M.P.J.-Sheffield ...	897	Aluminium Co. of America:		Assembling Machine. Feldpausch Automatic Screw ...	1417
		Stainless Steel Clad Aluminium Sheet ...	18	Assembling a Stator and Drag Cup for a Tachogenerator at works of Vaeetric Control Ltd. ...	1069
		Alundum Grinding Wheels. Norton 23	941	Assembling Tubular Aluminium Components by a Swaging Action. Magnesium Machine Set Up for Assembly. Feeding Parts for Automatic ...	734

INDEX  
Assembl  
Bearing  
for the  
Associat  
Air G  
Pole  
Devel  
Film:  
Magn  
New  
Projec  
Stud  
Astra  
and C  
Atlas  
tions  
of Bu  
Audio  
Count  
Aufwid  
Finish  
Regist  
Austin  
Ltd.:  
Univer  
Castell  
Austin  
Hymat  
Gears  
Austin  
Rivett  
Auto-The  
on  
Autocast  
Machin  
Autoclave  
Shell M  
Autogit  
Autolock  
Cutters  
Automate  
Printed  
Automate  
Pistons  
Automate  
Transmi  
Automate  
Equipme  
Automate  
Machine  
Automate  
ducting  
Automatic  
Spindle  
Automate  
for an  
Automate  
Forming  
Automate  
Automatic  
Air-oper  
Automatic  
Long S  
Redman  
Automatic  
off Oper  
Miyano  
Automatic  
Machin  
Etamic  
Automatic  
Delta H  
Automatic  
Shoe-cent  
Automatic  
Die Cast  
Automatic  
Kell  
Automatic  
Machine  
Automatic  
Flame-cut  
Bar  
Automatic  
Russian  
Automatic  
Drilling  
Automatic  
Machine  
ment  
Automatic  
Pistons  
Automatic  
Chuckin  
Gear Blau

	PAGE		PAGE		PAGE
Assembly and Removal of Large Bearing Rings, Induction Heating for the	90	Automatic Roll Forging Machines. Eumuco	317	Baier, Portable Motor-driven Transportable	184
Associated Electrical Industries Ltd.: Air Gauging Equipment for Relay Pole Pieces	416	Automatic Screw Assembling Machine, Feldpausch	1417	Balfour, Henry, & Co., Ltd., New Fabrication Shop for	1491
Development of Circarc Gearing	134	Automatic, Semi-, Production of Pistons	116, 172, 228	Ball and Roller Bearings, Some Aspects of the Manufacture of Pollard Standard	508
Film: Analysis by Mass	1209	*Automatic, Spindle-indexing Arrangement for an	892	Balls, High Precision Stellite	1309
Magnetic Seal for a Rotating Shaft	571	Automatic Surface Broaching Machine, Detroit	347	Balls, New Method of Measuring the Diameters of, to a High Precision Bandsaw Blades, Cutting Tests with DoAll	904
New Thyatron	200	Automatic Transfer and Loading Arrangements Employed by Vauxhall Motors, Ltd.	116, 172, 228	Bandsawing, Complex Missile Component Produced by	318
Project Training Scheme for Student Engineers	50, 322	Automatic Transfer System, Demonstration of the Glydo	1489	Bandsawing Machine, Set-up for Simultaneously Cutting Two Blocks of CIBA Aeroweb Metal Honeycomb on a Midsaw	325
Astra Type AFC 4 Universal Tool and Cutter Grinder	422	Automatic Transmission, Producing the Westinghouse	1336, 1392	Bar and Angle Cropping Machine, Kingsland Type D 50	640
Atlas Missile, Some Typical Operations Involved in the Production of Bulkheads for the	580	Automatic, Unimat Single-spindle Automatic Vertical Honing Machine, Fuji	1473	Bar, Automatic Machine for Profile Flame-cutting Components from Bar Feed Unit for Power Driven Hackaw, Wicksteed Automatic	882
Audio-activated Equipment for Counting, Trumeter	1070	Automatic Welding Equipment for Finned Heat Exchanger Tubes, Sciaky	1192	Bar-feeding Equipment for a Crack-detection Unit	1190
Aufuldfish, W.: Finishing Components for Cash Registers by Vibration Deburring	1110	Automatic Welding Machine for Motor-car Body Sub-assemblies, Steelweld	1201	Bar Production (Bromsgrove), Ltd.: Flame-plated Honing Mandrels	1238
Austin, James, & Sons (Dewsbury), Ltd.: Set-up for Cutting a 36- by 12-in. Universal Beam to Produce a 60-ft. Castellated Beam	532	Automatic Wire Measuring, Cutting and Stripping Machine, Artos	305	Bar and Tube End De-burring Tools, Burflex	1115
Austin Motor Co., Ltd.: Hymatic Link-line for Layshaft Gears	85	Automatics, Demonstration of Tarex and Strohm	852	Bar Turning Machine, Farmer Norton Automatic Centreless	1114
Autecla Type H100 Electro-magnetic Riveting Machine	882	Automation of the Die Casting Process	1252	Barbican, T.P.: New Trends in Gravity Die Casting Practices	489
Auto-Thermic Pistons, Operations on	233	Automation, Low Cost	105	Barlow-Whitney, Ltd.: High/low Temperature Environmental-test Cabinets	1112
Autocast Self-pouring Die Casting Machines, Stahl	492	Automation for Small-batch Production	1276	Barmax Fully-automatic Electrochemical Metal Forming Machine	1247
Autoclave for De-waxing Investment Shell Moulds	1372	Autoscan Line Following Device, B.O.C.	462	Barrel Zinc Plating Plant, Efecodylite Type C	301
Autogill Type 100P Roll-feed Press	1199	Autoset Controls, Production Line for Autoset (Production), Ltd.: Machinery Transporter	1072	Barrelling Equipment, Alanco Thru-Feed	1086
Autolock Type 8 Chuck for Milling Cutters, Clarkson	702	Auxiliary Rolling Machinery, Ltd.: Rotary Trimming Unit for Removing Strip Ends	995	Barrels, Set-up for Spinning Halves of Aluminium	798
Automated Drilling and Punching of Printed Circuits	190	Avco Corporation: New Type PG 100 Plasma Gun for Flame Spraying	1049	Barrymount Machine Mounts, Kendall & Gent Vertical Milling Machine Mounted on	1334
Automated Handling Equipment for Pistons	117	Avdel, Ltd.: Titanium Self-plugging Blind Rivet	890	Barton, H.K.: Die Casting Supplement 1937-1962	996
Automated Vibratory Finishing of Transmission Valves	263	Avelling-Barford, Ltd., Typical Operations at the Works of	894	Gooseneck-type Injection Arrangements for Die Casting Machines	654
Automatic Assembly of Electrical Equipment	242	Avnet-Shaw Corporation: Progress in the Mechanization of the Shaw Process	351	Metal Flow in Thin-walled Die Castings	201
Automatic Centreless Bar Turning Machine, Farmer Norton	1114	Axle Housing, Production of an, Incorporating Cold-extruded Sleeves	396	Operational Variables in the Die Casting Process—Their Analysis and Control	1479
Automatic Control Equipment, Producing Components for	864	Axle Shafts, Garringtons Induction Hardening Machine for	193	Baskets, Self-stacking Storage	1393
Automatic with a Counter-rotating Spindle Slide, B. & W.	373	Aylesbury Automation, Ltd.: Rotary Disc Feeder	1242	Batch Production, Automation for Small	1276
Automatic, Crawford Feed Finger for an	604			Batch Production of Norgren Units, Efficient Methods for	960, 1220
Automatic Electro-chemical Metal Forming Machine, Barmax Fully Automatic Equipment, Ltd.: Air-operated Platen Press	1108	B		Batch Production under Tape Control at the Works of Boulton Paul Aircraft, Ltd.	766
Automatic Equipment for Producing Long Sheet Metal Components, Redman	1418	B.D.M. Chamfering and Parting-off Machine	79	Bath, The Tecam (R) Fluidized	1202
Automatic for Forming and Cutting-off Operations on Bar Material, Miyano	1300	B.H.P. Machine Tool Co., Ltd.: Lightweight Coil Cradle and Straightener	706	Batignolles, H. Ernault, Lathes	77
Automatic Gauging and Sorting Machine for Valves, O.M.T.-Etamic	1128	B.I.C.C. Burndy, Ltd.: Thermoweld Welding Process	488	Baty No. 600 Optical Projector	680
Automatic Gauging Machines, Tokyo Delta High-speed	1415	B.I.P. Engineering, Ltd.: New BIPEL Injection Moulding Machine	1193	Bausch & Lomb, Inc.: Type DR-25B Optical Gauge	94
Automatic Grinding Machine, Nippei Shoe-centreless	1469	B.P.S. Machinery & Spares, Ltd.: Machine Tool Demonstration	604	Bayliss & Withers, Ltd.: Bar-feeding Equipment for a Crack-detection Unit	1190
Automatic High-speed Operation of Die Casting Machines	1006	See also	1374	Beam, Developments in Electron, and Light Beam Techniques for Metal-working	59
Automatic Indexing Work Tables, Keir	93	B.S.A. Precision Castings, Ltd.: Modern Investment Mould-making Techniques	620	Beam, Set-up for Cutting a 36- by 12-in. Universal, to Produce a 60-ft. Castellated	532
Automatic Internal Grinding Machine, Strakonics	574	B.S.A. Small Tools, Ltd.: Golden Arrow High-speed Twist Drills	786	Beam Unit, Interval Electron	138
Automatic Machine for Profile Flame-cutting Components from Bar	314	B.S.A. Tools, Ltd.: Penatron Spark Erosion Machine	375	Beam Welding, Electron, without Vacuum	1180
Automatic Machines for Camshafts, Russian	257	B-W High-low Temperature Environmental-test Cabinets	1112	Beam Welding Rotors for Gas Turbine, Electron	1015
Automatic Magazine Feed Set-up for Drilling Brass Cups	867	Baird Machine Co.: British-built Baird Machines	612	Bearing Cages, Resistance-welded Ball	1077
Automatic Milling Cutter Grinding Machine with Electrolytic Equipment	644	Type 5L 40-ton Transfer Press	649	Bearing, Cooper 850-mm, Split Roller on Trunnion of L.D. Steel Converter	327
Automatic Orientating Unit for Pistons	173	Baker, John, & Sons, Ltd.: Rust-resistant Files	1071	Bearing, "Free-Flex" Cross-spring Pivot	910
Automatic, Pittler Pidofat 2-spindle Chucking, Set-up for Machining Gear Blanks	604	Balancing Motor-car Crankshafts, Renault Transfer Machine for	744	Bearing Rings, Induction Heating for the Assembly and Removal of Large	90
		Balding Engineering, Ltd. The New Works of	877		
		Baldwin-Lima-Hamilton Corporation	1416		



PAGE	PAGE	PAGE	PAGE
Burfex, Ltd.: Bar and Tube End De-burring Tools ... 1115	Burnishing Tool. B.T.G.-Madison Micromer Roller ... 680	Burroughs Corporation: Savings of Inspection Time obtained with a Co-ordinate Measuring Machine ... 1429	Burns and Air Grinders. Flex-master Carbide ... 516
Burton, Griffiths & Co., Ltd.: Machine Tool Demonstration ... 1080	See also ... 37, 347, 698	Bushes of Ferro-Tic C Sintered Machinable Carbide. Drill ... 324	Butane. 12-ft. Container for Liquid ... 48
C			
C.E.J. Nib Taps for Nut Tapping Machines ... 691	C.I.B.A. (A.R.L.), Ltd.: Set-up on Midaw Band Sawing Machine for Simultaneously Cutting Two blocks of Aeroweb Metal Honeycomb ... 325	C.R.S.I.M. French Control System. Recent Developments in ... 821	C.S. Carburetors, Ltd.: Type K 500-1 Air-operated Compound Table ... 832
Cabinet Construction. Apton Cold-roller Steel Angle for ... 707	"Cable Preforms" for TV Sets. Producing ... 302	Cable Sleeves and Markers. Helas shrink ... 1075	Cages. Resistance-welded Ball-bearing Calculator. Alpina Universal ... 1077
Caliper Gauge. Chesterman Type 600 ... 683	Calipers. Making Parts for Vernier ... 800, 924	Calver, C.M.G., Ltd.: Opening of New Works ... 274	Reviac Dial Gauge Thread Comparator ... 649
Universal Inspection and Measuring Table ... 126	Cam-controlled Milling Machine. Sankyo ... 1410	Cam. Design of the Tangent ... 518	Cam-operated Electric Comparator. East German ... 27
Camera. Round the Shops with a ... 246, 360, 679, 653	Cameron Iron Works, Ltd.: Generating Spheres by Milling Using Throw-away Clamped-tip Tools ... 774	Camshafts. Russian Automatic Machines for Operations on ... 257	Canning, W. & Co., Ltd.: Demonstration of the Glydo Automatic Transfer System ... 1489
Verdict Type T500 Dial Indicator Carbide Burrs and Air Grinders. Flexmaster ... 516	Carbide Cutters. Re-sinking Die Blocks with ... 425	Carbide. Drill Bushes of Ferro-Tic C Sintered Machinable ... 324	Carbide. Ferro-Tic C Machinable. Air Gauge Spindles Made from ... 1127
Carborundum Co., Ltd.: 5A-V50 Precision Grinding Wheel Cardeflex Flexible Coupling for Donawitz Furnace ... 1490	Cargill-Detroit Corp.: Shaft Straightening Machine ... 1117	Carne, Rudolph, & Co., Ltd.: Machine Transport by Air of Huron Milling Machine ... 914	See also ... 610
Carter Gears, Ltd.: Type F13 Variable-speed Gear Unit ... 722	Cartridge Tool. Ceramic-tipped ... 5	Cartridge-type Tools. Production of Microbore ... 60, 452	Cash Registers. Finishing Components for, by Vibration De-burring ... 1110
Cast Blocks for Forging and Extrusion Dies ... 415	Cast-iron Brake Drums. Machining, with Ceramic Throw-away Tipped Tools ... 775	Cast Iron for Very Low Temperature Applications. New ... 1353	Cast Iron. Yttrium Nodular ... 546
Cast-Master heavy-duty 600-ton Die Casting Machine ... 1249	Cast-Master Pressure Die Casting Machine ... 495	Cast Tools. Advantages Obtained from the Use of ... 430	Casting. The Extending Field for Investment ... 507
Casting Plant. Large Continuous ... 526	Casting Zinc Alloy. Saunders Rubber-mould Process for ... 35	Castings. Checking the Soundness of Very Large ... 1137	Castings for Paper-making Machinery. New Foundry for the Production of ... 284
Castings. Precision Stainless Steel, for Milking Machines ... 133	Caterpillar Tractor Co., Ltd.: Installation of Rotary-hearth Atmosphere-controlled Electric Furnace ... 907	Making Earth-moving Equipment Catmurr Machine Tool Corporation, Ltd. ... 592, 1138	Cattermole (Hydraulics), Ltd., Expansion at H.S. ... 966
Caseneuve HB 500 Centre Lathe. Japanese-built ... 1296	Ceda Size System on Brown & Sharpe Grinding Machine ... 818	Cementation (Muffeltec), Ltd.: Barrymount Isolating Machine Mounts in Use at Brown, Lennox & Co., Ltd. ... 1334	Cemented Carbide Inserts. Sandvik Coromant ER Treated ... 833
Centec Machine Tools, Ltd.: Low Cost Automation ... 105	Central Office of Information: New Films ... 663	Centrolograph Recorder ... 80	Centre Finder. Oldak ... 693
Centre de Recherche Scientifique Industrielle et Maritime: Recent Developments in the C.R.S.I.M. Control System ... 821	Centrifugal Clutches. Fenner-Platt Centring Gauge. Federal Electronic Ceramic Moulding. Pressure Chamber for, made from a 16-in. Naval Gun ... 1319	Ceramic Tools. Some Applications of, for Machining Pontiac Components ... 4	Ceramic Tools. Throw-away-tipped. Machining Cast Iron Brake Drums with ... 775
Cerro Copper & Brass Co.: Production of Non-ferrous Forgings from Extruded Slugs and Castings ... 987	Chain Block Wheels. Milling, on a Hayes Tracemaster Machine ... 986	Challenger Hydraulic Surface Grinder. Boyar-Schultz ... 1262	Chamberlain Industries, Ltd.: Staffa Type CF6 Hydraulic Bending Machine ... 588
Chamfering and Parting-off Machine. B.D.M. ... 79	Chance Vought Corporation: Chip Collection on a Skin Milling Machine ... 189	Astronautics Division: Fabrication of Tanks for the Saturn C-1 Missile ... 641	Change Gear Trains. The Arrangement of ... 477
Changing the Speed of A.C. Motors ... 527	Changing, Tool, Attachment. Edlund Automatic ... 539	Chaphone Engineering Developments, Ltd.: Honing Machines ... 37	Chatillon, John, & Sons: Dial-type Push-pull Load Measuring Gauges ... 91
Checking Instrument for Gears. Fellows No. 8TIM Pitch ... 652	Checking Machine. IMO 200 Universal Gear ... 572, 967	Checking the Soundness of Very Large Castings ... 1137	Chesterman, James, & Co., Ltd.: Making Parts for Vernier Calipers ... 800, 924
Type 600 Caliper Gauge ... 683	Chevrolet Transmission Valves. Automated Vibratory Finishing of Chinese Lathe, Greasing, at, Wuhan Heavy Machine Tool Plant ... 551	Chip Collection on a Skin Milling Machine ... 189	Chip Flow Characteristics and Edge Build-up on Cutting Tool. Set-up on Double-column Planing Machine for Studying ... 212
Chips. Reclaiming Aluminium, at a Transmission Factory ... 1287	Christen Type AF-80 Cutter Grinder ... 885	Chromalloy Corporation: Air Gauge Spindles made from Ferro-Tic C Machinable Carbide ... 1127	Drill Bushes of Ferro-Tic C Sintered Machinable Carbide ... 324
Chrysler Defence Plant: Operations on Machine Gun R Turrets for Tanks on Tape-controlled Machine ... 990	Chuck, B. & S. Micro-Mesh Magnetic ... 893	Chuck. Clarkson Dedlock 150 ... 792	Chuck for Milling Cutters. Clarkson Autolock Type S ... 702
Chucking Machine Arranged for Rapid Setting Up ... 71	Churchill Gear Machines, Ltd.: A Cold Rolling Process for the Manufacture of Gears ... 1362	*Work-holding Arrangement for a Gear Hobbing Machine ... 892	Chrysler Corporation: Automatic Assembly of Electrical Equipment ... 242
High speed Turning of Torque Converter Covers ... 364	Cincinnati Milling Machine Co., U.S.A.: Acra-drive-22 Low-speed Hydraulic Motor ... 813	Circular Gearing. The Development of Circular Table Unit. Richards 8-ft. Self-contained ... 1433	Citizen Measuring Equipment ... 1414
Clamped-tip Tools. "Throw-away" Clamping Fixture. Production of a, from Metolux Iron ... 262	Clamps. Destaco Air- or Hydraulically-operated ... 1203	Clare "Long Series" 3-flute Routing Cutters ... 692	Clarifiers. M.S.E. Type 3C Centrifugal Coolant ... 1195
Clark Clutch Co., Ltd.: 1.75 Electro-magnetic Tooth Clutch ... 889	Clarkson (Engineers), Ltd.: Autolock Type S Chuck for Milling Cutters ... 702	Dedlock 150 Chuck ... 792	Cleaner. AD40 Cyanide-free ... 962
Cleaner. Metaforma Fradic Steam ... 594	Cleaning and Degreasing Liquid. GWD 346 ... 824	Cleaning Fluid Ardrex No. 180 Metal ... 1430	Cleaning Plant. Special Tightman Airless Wheelabrator ... 970
Cleaning Units. Polysonic Ultrasonic ... 891	Cleveland 400-ton Die Casting Machine ... 1250	Clutch. Clark 1.75 Electro-magnetic Tooth ... 889	Clutch. Metastream 34-in. Diameter Adjustable Overload Slipping ... 103
Clutches. Fenner-Platt Centrifugal Clutches. ZC Series Matrix Mechanical ... 1285			



	PAGE		PAGE		PAGE
CO <sub>2</sub> Welding Wire Pack. New Phillips .....	900	Constructions Mécaniques B.D.M. Chamfering and Parting-off Machine .....	79	Control, Tape, Richmond 2-in. Capacity Drilling Machine with 730, 857 .....	857
Co-ordinate Drilling Machine with Numerical Control. Jameson .....	1241	Contact, Moment of, between Grinding Wheel and Work. New Matrix Equipment for Indicating .....	779	Control, Tape, Sheet-metal Punching Machine with .....	729
Co-ordinate Inspection Machines. New Ferranti .....	1201	Contactors. Dewhurst Type CX Electrical .....	234	Control Unit. Humphreys Automatic De-magnetizing .....	1313
Co-ordinate Measuring Machine. Savings of Inspection Time obtained with a .....	1429	Container for Liquid Butane. 12-ft. Containers for Radioactive Materials. Machine for Operations on .....	817	Control Unit. Pryor Air-operated .....	834
Co-ordinate Setting Work Table. Hughes .....	594	Conti Type CVU 1500 Universal Milling Machine .....	960	Controls. Production Line for Autoseal .....	1437
Coating, Aluminium, Improvement of Fatigue Strength by .....	241	Continental Aviation & Engineering Corp.: Producing Components for Small Gas Turbines .....	1073	Contronics, Ltd.: Ultrasonic Sensing and Switching Relay .....	481
Coating for Aluminium. Iridite No. 14E Al-Coat Corrosion-resisting .....	715	Contour-grinding and Multi-purpose Machine. Vertical .....	1131, 1268	Conveyor. Udal Type MA-48-12 Air-operated Transportable .....	705
Coating, Bond, and Painting Galvanized Steel Panels, Production Line for .....	128	Contour Milling. Economics of Electronically-controlled Machine Tools for .....	1459	Conveyors. Hunter Transportable .....	27
Coating of Ferrous Surfaces. Recent Developments in the Arc Plasma Spray .....	1126	Contour Milling. Report on .....	1321	Conveyors. Udalveoyr Mobile .....	1421
Coating Technique. Fluidized-bed Dip, for Investment Moulds .....	620	Contour Milling. Time and Cost Comparisons for Electronic and Conventional .....	1335	Coolant Clarifiers. M.S.E. Type 3C Centrifugal .....	1195
Cohen, George, Sons & Co., Ltd. .....	650	Control, Electronic, Machine Tools with, for Contour Milling .....	1459	Coolie Pallet and Lift Trucks. New Cooper Roller Bearings Co. Ltd.: 850-n.m. Split Roller Bearing on Trunnion of L.D. Steel Converter .....	327
Coil Cradle and Straightener. B.H.P. Coiling Drum. Mellor .....	1373	Control Equipment. Producing Components for Automatic 864, 969, .....	1036	Copper as an Alloying Element for Grey Cast Iron .....	313
Colbro 5-in. Cold-sawing Machine .....	1230	Control, Herbert DeVlieg .....	766	Copy-milling Machines and Equipment. Demonstration of Kampf .....	269
Cold Billet Shear. Lamberton No. 6 Cold-extruded Sleeves. Production of an Axle Housing incorporating .....	396	Control. New Britain Electro-mechanical System of .....	71	Copy-milling Sprocket Components. Vero Machine for .....	679
Cold Extrusion of Steel. Hydraulic Presses for the .....	358	Control, Numerical, Bend-O-Matic Tube-bending Machine with .....	1416	Copy-turning Attachment. Synchron Series Mark 50 .....	630
Cold Extrusion of Steel and Other Materials. Further Developments in the Practice of the .....	1051	Control, Numerical, Drilling Valve Plates Under .....	376	Copying Attachment. Hydracopie Hydraulic .....	961
Cold Heading Machine. Roy Type SP-1 High-speed 2-blow .....	1261	Control, Numerical, Economies Effected by Use of Machines with, in Production of Components for Small Gas Turbines .....	1073	Copying Equipment for Turning Hemispherical Forms. Hepworth .....	540
Cold Rolling Process for the Manufacture of Gears .....	1362	Control, Numerical, G.S.P. Type 205N Drilling and Boring Machine with .....	307	Copying Lathes. Ducre .....	79
Cold-sawing Machine. Colbro 5-in. College of Aeronautical and Automobile Engineering Prizegiving .....	1208	Control, Numerical, Jameson Co-ordinate Drilling Machine with .....	1241	Copying Machine. Yoshikawa Type YLC 400 Automatic .....	1294
College of Aeronautics Open Days .....	212	Control, Numerical, Meddings 4-in. Capacity Turret Drilling Machine with .....	1193	Coyling Unit. D.S.G. 90-deg. Hydraulic .....	372
Common Market. Production, Management and the .....	1140	Control, Numerical, O-M Vertical Boring Mill with .....	1354	Coyling Unit for Lathes. Hepworth Type 300 Hydraulic .....	828
Commonwealth Small Arms Factory Anniversary .....	1328	Control, Numerical, Renault Drilling Machine with .....	708	Cores for Investment Moulds. Metal Cores for Wave-guide Manufacture. Fusible Alloy .....	1311
Communication Systems Employed at the Factories of the Timken Roller Bearing Co. .....	1121	Control, Numerical, Souza Type CNZ Milling Machine with .....	470	Coromant ER Treated Cemented Carbide Inserts. Sandvik .....	833
Communist Countries. Machine Tools from .....	435, 555	Control, Numerical, Wiring Terminal Panels under .....	361, 500	Corrosion-resisting Coating for Aluminium. Iridite No. 14E Al-Coat .....	715
Comparator. East German Cam-operated Electric .....	27	Control, Programme, Brown Boveri Large Capacity Spot-welding Machine with .....	187	Corrugating Machine. Scotts Airflow Roll Form .....	92
Comparator. Heatair Magnoptic 6/60 Optical .....	994, 1144	Control, Programme, Makino Vertical Milling Machine with .....	1407	Cost Reduction in Machine Building. Possibilities for .....	709
Comparator. O.M.T.-Elastic Differential .....	684	Control, Programme, Milling Machine with .....	1293	Cost Saving by Standardisation and Rational Design .....	1151
Comparator. Revlac Dial Gauge Thread .....	649	Control, Servo, Akashi Precision Gear Hobber with .....	1474	Counting. Trumeter Audio-activated Equipment for .....	1070
Comparator. Sigma 31 Transistorized Electronic .....	678	Control, Spark-gap, Accurate Profiling under .....	83	Coupling, Cardiflex Flexible, for Danowitz Furnace .....	1490
Compound Table. C.S. Carburetors Type K 500-1 Air-operated .....	832	Control System. Ceda Size .....	818	Covema Boring-Milling Machine .....	310
Compressed Air Equipment. Norgren "Miniature" .....	1316	Control System. Recent Developments in the C.R.S.I.M. French .....	821	Coveny Gauge & Tool Co. Ltd.: Circular Division Tester .....	677
Compressor End Covers. Ex-Cell-O 2-spindle Machine for .....	589	Control, Tape, "American" Centre Lathe with .....	195	Equipment for Indicating Moment of Contact between Wheel and Work .....	779
Computer. Bonus Item .....	306	Control, Tape, Batch-production under, at the Works of Boulton Paul Aircraft, Ltd. .....	766	New Inspection Equipment .....	676
Computer Programme for Selecting Change Gears .....	348	Control, Tape, Elektrom Carlson Drafting Machine with .....	825	Slip gauges to DIN 861 Specification .....	1437
Computer System. Elliott-Automation ARCH .....	252, 1478	Control, Tape, G.S.P.-Matic Drilling and Boring Machine with .....	99	ZC Series Mechanical Clutches .....	1285
Computer System for Material Selection .....	1432	Control, Tape, Orthomat Drafting Machine with .....	726	See also .....	1144
Concast A.G.: Large Continuous Casting Plant .....	526			Cowlishaw, Walker & Co. Ltd.: 40-ton Inclined Power Press .....	1195
Conductiflux Crack Detection Equipment .....	958			150-ton Double-column Eccentric Press .....	706
Cones. The Explosive Forming of Conference on the Accuracy of Industrial Measurement of Length and Diameter .....	235			Crack-detection Equipment. Conductiflux .....	958
Conference. Third International Machine Tool Design and Research 788, 850, 1051, 1123, 1276 .....	1276			Crack-detection Unit. Bar-feeding Equipment for .....	1190
Consolidated Controls Corporation: Unimate Programmed Manipulator .....	1251			Craig & Derrick Ltd.: Plug-in Limit Switches .....	586
Consolidated Pneumatic Tool Co., Ltd.: Air Nip Pliers .....	366			Crane Packing Ltd.: Dispensers for Pipe Sealing Tape .....	894
Construction, Heavy Steel, Spot Welding in .....	564			Cranehafts. Czechoslovak Machines for Induction Hardening .....	1049

PAGE		PAGE		PAGE		PAGE	
in. 730, 857	Cropping Machine, Kingdland Type D 50 Bar and Angle ...	640	De-burring Unit, Shaveburr Gear-tooth ...	422	Die Casting Brass ...	1253	
729	Cross Co.: Traction-type Machine for Operations on Motor Car Transmission Spiders ...	420	De-burring, Vibration, Finishing Components for Cash Registers by De-magnetizing Control Unit, Humphreys Automatic ...	1110	Die Casting Characteristics of Zinc, Aluminum and Magnesium ...	1256	
1313	Cross International A.G. ...	421	De-waxing Investment Shell Moulds, Autoclave for ...	1313	Die Casting Congress and Exposition, Detroit, Second National: Automatic High-speed Operation of Die Casting Machines ...	1006	
1437	Crothwaite Furnaces & Scriven Machine Tools Ltd.: Machine for Expanding Motor-car Wheel Rims to Size ...	607	Dean, Smith & Grace, Ltd.: 90-deg. Hydraulic Copying Unit ...	372	Descriptions of Exhibits ...	1249	
481	Crouzet CC530 Lathes ...	80	New Foundry ...	270, 552	Standard Unit Die Casting Machine Construction ...	998	
12	Crow, Hamilton & Co. Ltd.: Barnax Fully-automatic Electro-chemical Metal Forming Machine ...	1247	Dedlock 150 Chuck, Clarkson ...	792	Die Casting Machine, Application of Unimate Manipulator to ...	1251	
27	Crown Shaving Attachment, G.C.U. Red Ring ...	1119	Definition of "Machine Tool," Expanded ...	731	Die Casting Machines, Cast-Master Heavy-duty 600-ton ...	1249	
1421	Cruikshank's Division of Forestal Industries (U.K.) Ltd. 715, 962, 1419	1419	Deinzer, V. W.: Propeller Production Costs Reduced by the Use of Modern Machine Tools ...	1181	Die Casting Machines, Automatic High-speed Operation of ...	1006	
1195	Cumbe Type 026 Centre Lathe ...	194	Delaney-Gallay, Ltd.: Set-up for Spinning Halves of Aluminium Barrels ...	708	Die Casting Machine, Cast-Master 500-ton Pressure ...	495	
832	Curtiss-Wright Corporation: Built-up Dies for Trimming Turbine Blades ...	874	Delta Diecastings Ltd.: Installation of Cast-Master Pressure Die Casting Machine ...	495	Die Casting Machine, Cleveland 400-ton ...	1250	
327	Cast Blocks for Forging and Extrusion Dies ...	415	Delta High-speed Automatic Gauging Machines, Tokyo ...	1415	Die Casting Machine Construction, Standard Unit ...	998	
313	Re-sinking Die Blocks with Carbide Cutters ...	425	Delta Pulcom Diameter Measuring Unit ...	1296	Die Casting Machine Design, Effect of, on Casting Quality ...	1255	
260	Cutlase Circular Sawing Machine, Christen Type AF-80 ...	885	Demonstration, B.P.S. Machine Tool Demonstration, Burton Griffiths Machine Tool ...	604	Die Casting Machine, Lester-Phoenix 400-ton ...	1251	
679	Cutter Grinding Machine, Vollmer Type FSM Automatic ...	199	Demonstration of the Glyde Automatic Transfer System ...	1489	Die Casting Machines, Gooseneck-type Injection Arrangements for Die Casting Practice, New Trends in Gravity ...	489	
630	Cutter Re-grinding Machine, Mitsubishi Gear Shaving ...	1473	Demonstration, Heald Machine Tool Demonstration of Kampf Copy-milling Machines and Equipment ...	269	Die Casting, Present State and Prospects of Magnesium ...	1257	
961	Cutting, Flame, Components from Bar, Automatic Machine for Profile Cutting, Large-diameter Asbestos Pipes, Machine for ...	811	Demonstration, Marbax Machine Tool ...	1261	Die Casting Process, Automation of the ...	1252	
540	Cutting-off Machine, Sala Fully-automatic ...	1194	Demonstration of Threading Techniques ...	1021	Die Casting Process Operational Variables in the—Their Analysis and Control ...	1479	
79	Cutting-off Machines, Sacem Zipp ...	1116	Demonstration of Wire and Strip-forming Machines ...	1027	Die Casting Supplement 1937-1962 ...	996, 1265	
1294	Cutting-off Units, Use of Hydraulic Shearing and ...	727	Dempster, Robert, & Sons Ltd.: 12 ft. Container for Liquid Butane ...	48	Die Castings, Gating of Aluminium Alloy ...	1255	
372	Cutting Tests with DoALL Bandsaw Blades ...	486	Denson, Samuel, & Son, Ltd.: Type T54 Combined Creep and Fatigue Testing Machine ...	1064	Die Castings, Metal Flow in Thin-walled ...	201	
528	Cyanide-free Cleaner ...	962	Depreciation Rates and Investment Allowances ...	1095	Die Castings, New Engineering Standards for ...	320	
1311	Cybermetric Air Gauging Equipment for Relay Pole Pieces, Solex ...	416	Design, Effect of Die Casting Machine, on Casting Quality ...	1255	Die Handle and Tryout Press ...	1029	
533	Cylinder Block Produced by Powder Metallurgy, High-pressure Pump Cylinder Blocks, Ex-Cell-O Fine Boring Machine for ...	651	Designex (Coventry) Ltd.: Dex Multi-Spindle Head and Work-holding Fixture Assembly for Drilling Operations on Cylinder Heads ...	848	Die-less Explosive Forming of One-piece Thin Shells of Revolution ...	1123	
715	Cylinder Bore Gauge, Mercer Type 228, and 2-point Setting Piece ...	695	Desmond, D., & Sons: Vee-lock Production Vice ...	419	Die for Producing Duplex Gear, Japanese Metal Powder ...	1300	
92	Cylinder Liners, Perfection Transfer Honing Machine for ...	487, 556	Desoutter Bros., Ltd.: Air-operated Drilling Unit ...	701	Die for Producing Duplex Gear, Japanese Metal Powder ...	1300	
799	Cylinders, New Martonair Air ...	912	Die Sets with Ball Bearing Guide Bushes ...	887	Die Sets with Ball Bearing Guide Bushes, Desoutter ...	887	
1151	Czechoslovak Machine Tools, Some Recent Developments in ...	572, 667	Destaco Air- or Hydraulically-operated Clamps ...	1203	Die Shear Line for Metal Strip, Vickers-McKaymatic ...	70	
1070	Czechoslovak Machine for Induction Hardening Crankshafts ...	1044	Detroit Broach & Machine Co.: Automatic Surface Broaching Machine ...	347	Die Sinking Machine, Mitsubishi Electrolytic ...	1413	
1490			DeVilbiss 2B-36 Jigmill, Herbert/ ...	766	Diedesheim Rotary Transfer Machine ...	121, 172	
310			Dewhurst & Partner, Ltd.: Starters for Squirrel Cage Motors Type CX Electrical Contactors ...	834	Dieling Press, Morgenrothe High-speed ...	23	
677			Dexion, Ltd.: Slotted Angle and Glidewheel Conveyor Wheels for Storage of Colston Dishwasher Cabinets ...	440	Dies, Application of Templet Steel Rule ...	541, 740	
779	D.B. Toolform Plastics Punch and Die ...	104	Dial-feed Projection Welders, Seinsky Dial Gauge Thread Comparator, Revlac ...	649	Dies, New Grinding Fixtures for Coventry ...	196	
678	Dallow Lambert Ltd.: Dust Collector for Steel Tube Finishing Plant ...	1428	Dial Indicator Stand, Sanderson ...	689	Dies, Spark-eroding Press Tool—A New Technique ...	769	
1437	Daphne Research Reactor, Large Aluminium Plates for a New ...	98	Dial Indicator, Verdict Type T 500 Dial Test Indicators, Easycheck Universal Holder for ...	421	Dies for Trimming Turbine Blades, Build-up ...	874	
1285	Dargue Simpton Drafting Unit, Darwins, Ltd.: Film—"True-process Castings"—Dashpot, Kinetrol Continuous-rotation ...	1488	Dials, Tritium Luminous Compound for ...	184	Diesel Engine, New Rolls-Royce ...	968	
1144	Datamol Control, Herbert/DeVilg Jigmill ...	766	Diameter, A Machine for the Precise Measurement of External ...	295	Diffraction Gratings and Air Gauging Equipment fitted to Herbert No. 90 Combination Turret Lathe ...	213	
1190	Daugherthy, J.: The Production of Gas Turbine Shafts by Shear Spinning ...	598	Diameters of Balls, New Method of Measuring the, to a High Precision ...	904	"Digital Follower" Position Indicator, Paramatic ...	857	
586	Davies, R. W.: Design of the Tangent Cam ...	518	Diatrim Dressing Tools for Grinding Wheels, Van Moppes ...	849	Digital Permeability Testing Equipment ...	1428	
89	Davis, Stuart, Ltd.: Red Ring Multiple Manifold-type Air Valves ...	1468	Die Blocks, Re-sinking, with Carbide Cutters ...	425	Dimco (Gt. Britain), Ltd.: Horizontal Boring Machines in Dimco Warehouse ...	610	
1044	Type FES Precision Fine Boring Machines ...	194	Die Cast Aluminium Typewriter Frames, Transfer Machining of	901	"Disengaging the Work from the Cutter, System for, on a Gear Shaping Machine ...	48	
744	See also ...	41			Dispensers for Pipe Sealing Tape ...	89	
1431	De Barr, A. E.: Institute for Advanced Studies in Engineering Sciences, Birmingham University ...	330			Distington Engineering Co., Ltd. Large Continuous Casting Plant ...	526	
1249	De-burring and Edge Trimming Tool De-burring Equipment, Powertron Ultrasonic ...	104			Fluorocarbon Slipping and Anti-sticking Agent ...	611	
694	De-burring Tools, Birsflex Bar and Tube End ...	1115			Dixon Sintoaloy, Inc.: High-pressure Pump Cylinder Block Produced by Powder Metallurgy ...	596	
1064					DoALL Bandsaw Blades, Cutting Tests with ...	486	

PAGE		PAGE		PAGE	
Donaldson, I.S. (see Prof. W. Johnson)		Drilling Machine, Saut-du-Tarn Type J3 C 320 Pillar-type	310	Elcontrol, Ltd.:	
Donovan Electrical Co., Ltd.:		Drilling Machines, Electro-Mechano Small-hole	1244	Proximity Switches	319
E.T.A.-10 Series Electronic Timer	466	Drilling Machines, New Kitchen & Walker	1062	Rectangular Housing for a Photo-electric Viewing Head	481
Dorman Machinery Sales, Ltd.	74, 79, 312, 592, 647	Drilling Operations on Cylinder Heads, Dex Multi-spindle Head and Work-holding Fixture for	848	Eldair No. 2 Alligator Scrap Shearing Machine	649
Dormer Milling Cutter with Throw-away Type	1314	Drilling and Punching of Printed Circuits, Automated	190	Electric Drills, Black & Decker 2-speed	1068
Dormer Products, Mobile Unit for	272	Drilling, Slot-milling and Stamping Small Brass Component, Special Shipston Machine for	1221	Electric Motors, Changing the Speed of A.C.	537
Dorobella, E.:		"Drilling" Small Holes in Tungsten Carbide and Nimonic, Metkem Machine for	697	Electrical Contactors, Dewhurst Type CX	234
Re-sinking Die Blocks with Carbide Cutters	425	Drilling and Tapping Machines, Meddings Special-purpose	1245	Electrical Equipment, Automatic Assembly of	242
Dorapa, Ltd.	422	Drilling Units, Desoutter Air-operated	701	Electro-Chemical Engineering Co., Ltd.:	
Dorast 45-ton Withdrawal Type Powder Compacting Press	950	Drilling of Valve Plates, Numerically-controlled	377	Efcu-Udyllite Type C Barrel Zinc Plating Plant	301
Douglas Aircraft Co.:		Drills, Black & Decker 2-speed Electric	1068	Electro-chemical Machining, Ex-Cell-O Equipment for	587
Expanding Machine for Accurately Sizing Missile Cases	723	Drills, Miniature Centre, and End Mills	903	Electro-chemical Machining of Metals, Metkem Machine for	697
"Over-forming" of Skin Panels for Stabilisers	438	Drive, A Slow-motion Micrometer	1016	Electro-chemical Metal Forming Machine, Barmax Fully-automatic	1247
Dow Chemical Co.:		Drum, Mellor Colling	1373	Electro-erosion Machine, Ustimu C2	312
Automatic Metal Transfer Methods for Magnesium	1258	Drummond-Asquith, Ltd. 77, 640, 883		Electro-hydraulic Guillotine Shears, Pearson	1242
Dowling & Dool, Ltd.:		Drummond Bros., Ltd.:	631	Electro-magnetic Riveting Machine, Autelca Type H100	883
Accuratool Capstan Lathe with Programme Control	380	Building Machine Tools		Electro-magnetic Tooth Clutch, Clark 1.75	889
See also	73, 310	"System for Disengaging the Work from the Cutter on a Gear Shaping Machine	45	Electro-Mechan-Heat, Ltd.:	
Downs, Chas. W. J.	1240, 1268	Drums, Magnetic Storage, Machining Operations on Mantle Components for	99	Type FR41 Projection Welding Machine	587
Dowty Selon Nylon Captive Sealing Washers	1076	Dualock Turning Tools with "Throw-away" Tips, Edibrac	962	Electro-Mechano Co.:	
Drafting Machine, Ekstrom Carlson Tape-controlled	825	Ducce Copying Lathe	79	Small-hole Drilling Machines	1244
Drafting Machine, Orthomat Tape-controlled	726	Duncan, J. L. (see Prof. W. Johnson)		Electro Slag Welding Machine, Large	820
Drafting Unit, Simpson	1071	Dust Collector for Steel Tube Finishing Plant	1428	Electrolube, Ltd.:	
Drawcote Dry-film Lubricants, New Drawings, Enlarged-scale, Aldridge Layout Fixture for Preparation of	895, 895	Dynamometer, Shoun KSA 500 Tool	1296	Grease No. 2G Lubricant	600
Drayton Controls, Ltd.:		Dynamometers, Large Heenan & Froude, for Russia	1435	Electrolytic Die-sinking Machine, Mitsubishi	1413
Producing Components for Automatic Control Equipment 864, 969, Dressing Attachment, Diaform No. 14/1	688	Dynastat Memory Drum	1251	Milling Cutter Grinding Machine with	644
Dressing Tools for Grinding Wheels, Van Moppes Dlatrim	849			Electrolytic Grinding Machine, Sparacatron GFO-E200	554, 667
Drill, Black & Decker Portable Electric, with Self-contained Power Source	402	E		Electrolytic Machining by the Anocut Process	935
Drill Bushes of Ferro-Tic C Sintered Machinable Carbide	324	E.I.A. Luton-Beds. Group Engineering Display	1493	Electrolytic Machining, Developments in	935
Drill Grinding Attachment, Guys	198	E.M.B. Co., Ltd.:		Electron Beam Unit, Intercol	138
Drill Point Grinder, Herbert Hunt 9B.DG.	964	Automatic High-speed Operation of Die Casting Machines	1006	Electron Beam Welding Rotors for Gas Turbines	1015
Drill Service (Horley), Ltd.:		E.M.I. Electronics, Ltd.:		Electron Beam Welding without Vacuum	1180
Miniature Centre Drills and End Mills	903	New Remote Monitoring System Photomultiplier Tubes of Polypoint Grating Polychromator	873	Electron-Physical Instruments, Ltd.:	
See also	1244	E.S.T. (Gauges), Ltd.:		Inercol Electron Beam Unit	138
Drill Stands, Trend Rack-feed Magnetic	1116	Tuffest Hardfacing Process	595	Electronic Autosizing Metrology, Ltd.	78
Drill Testing Machine, Archdale	958	E.T.S., Ltd.:		Electronic Centring Gauge, Federal Electronic and Conventional Contour Milling, Time and Cost Comparisons for	1335
Drilling Attachment for a Centre Lathe, Speedy & Eynon Air-hydraulic	180	Lark II Portable Welding Transformer	1109	Electronic Gear Testing Equipment, NEL	1420
Drilling and Boring Machine, G.S.P. Type 205 N	307	Earth-moving Equipment, Making Caterpillar	1152	Electronic Index Table, M. & M. 800 Roto-Mill	884
Drilling Brass Cups, Automatic Feed Set-up for	867	East German Presses and Automatic Inspection Machines	19	Electronic Timer, Donovan E.A.T.-10 Series	466
Drilling Complex Printed Wiring Boards, Equipment for	1286	East German Unit-construction Jig and Fixture Service	340, 663	Electronically-controlled Machine Tools for Contour Milling, Economics of	1450
Drilling Machine, Arboga Type EST 530	961	Easterbrook, Allcard & Co., Ltd. Works Extension	272	Electronique Appliquée à la Mécanique Stop-Cote Caliper Gauging Units	78
Drilling Machine Equipped for Automatic Control of Drive Motor, Pillar-type	1288	Easycheck Universal Holder for Dial Test Indicators	421	Electrothermal Engineering, Ltd.:	
Drilling Machine, Fobco Type 7-Eight	419	Eclipse No. 44 Multiple Hand Tool Edge-trimming Tool, De-burring and Edibrac, Ltd.:	294	Flexible Furnace Application	30
Drilling Machine, Grinston Twin-head	1115	Dualock Turning Tools with "Throw-away" Tips	962	ARCH Computer System	253
Drilling Machine, Heathway 12-spindle	177	Edlund Machinery Co.:		ARCH Digital Computing Equipment for a Tinning Line	1478
Drilling Machine, Hungarian 118-in. Swing Radial	1436	Automatic Tool Changing Attachment	539	Elliott, B. (Machinery), Ltd.:	
Drilling Machine, Imperator Pillar-type	200	Equipment for Drilling Complex Printed Wiring Boards	1286	10M High-speed Shaping Machine	825
Drilling Machine with Numerical Control, Jameson Co-ordinate	1241	Tape-programmed Machine for Printed Circuit Work	912	Elliott Omnispindle Lathe, Demonstration of Turning on	215
Drilling Machine with Numerical Control, Meddings 1-in. Capacity Turret	1193	Education in Machine Tool Design, The Need for Better	194	Eloxing-A New Technique for Spark-eroding Press Tool Dies	760
Drilling Machine for Printed Circuit Boards, Nawide No. 151	1262	Education, Production Engineering Edwards, F. J., Ltd.:	161	Elzentsmess Measuring Head, Carl Mahr	1297
Drilling Machine, Renault Numerically-controlled	708	Exhibition of Trumpf Machines Efcu-Udyllite Type C Barrel Zinc Plating Plant	301	Embassy Machine & Tool Co., Ltd.:	
Drilling Machine, Richmond 2-in. Capacity Tape-controlled	730, 857	Ekstrom Carlson & Co.:		Demonstrations of Kampf Copy-milling Machines and Equipment	269
		Tape-controlled Drafting Machine	825	Enbescu Projector for Measuring Brinell Hardness Test Indentations	1069



PAGE		PAGE		PAGE		PAGE	
319	Enclosures, Moors Airtight, for Atomic Energy Establishments ...	1326	FAB-TEC Automatic Parts Handling Equipment ...	116, 172, 228, 739	Films: Analysis by Mass (A.E.I.) ...	1209	
481	Engineer and the Method of Least Squares, The ...	403	Fabriflex Equipment ...	117, 172, 228, 739	Fluid Power Circuits—A Commonsense Approach (C.O.I.) ...	664	
649	Engineering Industries Association Luton-Beds. Group Display ...	1493	Facing and Boring Heads, G.M.T. Automatic ...	1377	Optical Gratings and Machine Tools (C.O.I.) ...	663	
1068	Engineering Products, Ltd.: Oldak Centre Finder ...	693	Facing the End of a Stator for Water Pump Motor ...	326	Sintered Metal Techniques (British Foundry) ...	554	
527	English Steel Castings Corporation Open Day ...	219	Facing Resinoid-bonded Pipes, Set-up for Form Turning and ...	44	Thermoplastics in Industry (Radi-weld) ...	1090	
234	ENIMS Bevel Gear Generator ...	144	Factory Equipment Exhibition ...	1069	Tru-process Castings (Darwins) ...	387	
242	Environmental-test Cabinets, B-W High/Low Temperature ...	1112	Fafnir Ball Bearing Co.: New Aluminum Foil Pack for Ball Bearings ...	1060	Filters, W.E.L. Pressure ...	790	
301	Epicyclic Gear Train, Some Details in the Design of the Simple ...	185	Resistance-welded Ball-bearing Cases ...	1077	Fine Blanking on Bess Presses ...	1133	
867	Epoxy Resin Investment Moulds ...	621	Fancu Control System ...	1354, 1355	Fine Boring Machine for Cylinder Blocks, Ex-Cell-O ...	651	
697	Erfurt Transfer Press, Pressen & Scherenbau ...	19	Farrel-Birmingham Company Inc.: Numerically-controlled Roll-grinding Machine ...	993	Fine Boring Machines, Stuart Davis Type FB3 Precision ...	194	
1247	Erie Forge & Steel Corp.: Checking the Soundness of Very Large Castings ...	1137	Fastener, Insulgrip Type 3 Blind ...	73	Fine Boring Machine, Toyo T-512 Double-ended ...	1412	
312	Esa S. A.: Fine Blanking Presses ...	1133	Fatigue Strength, Improvement of, by Aluminum Coating ...	241	Finishing Apertures in 1in. Thick Split Die, Set-up on Moore-Catmur No. 2 Jig Grinding Machine for ...	579	
1242	Etchells, David (Machinery) Ltd.: Multiforge Horizontal Forging Machines ...	1243	Fatigue Testing Machine, Denison Type T54 Combined Creep and ...	1064	Finishing Components for Cash Registers by Vibration Deburring ...	1110	
882	Etching Process for Aluminium, Norabryte ...	1191	Fatigue Testing Machine, NPL Type Slipping Clutch ...	153	Finishing Metal Parts, Developments in the Application of Lacomatic Vibrators for ...	482	
567	Euco Tools, Ltd.: Quickclamp Engravers' Vice ...	39	Federal Products Corporation: Electronic Centring Gauge ...	476	Finishing of Transmission Valves, Automated Vibratory ...	263	
1244	See also ...	39	Federal-Warco 400-cycle Resistance Welding Equipment ...	95	Finned Heat Exchanger Tubes, Sclaky Automatic Welding Equipment for ...	1192	
660	Ex-Cell-O Corporation: Boring Machine with Profiling Equipment ...	293	Feed Finger for an Automatic, Crawford ...	694	Fins, Machining Internal, in Components for Heat Exchangers ...	28	
1413	Equipment for Electro-chemical Machining ...	887	Feed Set-up for Drilling Brass Cups, Automatic Magazine ...	867	Fischer Copying Lathe, The 5,000th ...	1144	
554, 667	Equipment for Electro-chemical Machining ...	887	Feed Unit for Power-driven Hack-saw, Wickstead Automatic Bar ...	882	Fischer, G. Wesley: Comparison of Metal Spraying by the Plasma-arc and Gas Flame Processes ...	1423	
935	Ex-Cell-O Corporation (Machine Tools), Ltd. ...	589	Feeder, Aylesbury Rotary Disc ...	1242	Fisher, A.: The Engineer and the Method of Least Squares ...	403	
1015	Ex-Cell-O Group Sales, Ltd. ...	1066	Feeding Equipment, Bar, for a Crack-detection Unit ...	1190	Fixture for Holding Timing Sprockets Set up on Lapointe Broaching Machine ...	696	
1180	Exe Engineering Co., Ltd.: Improved Surface Grinding Machine ...	163	Feinbau Type PM 1 Finishing Lathe ...	378	Flame-cutting Components from Bar, Automatic Machine for Profile Flame-cutting Machine, Schichau Quadruplex ...	828	
138	Exhibitions: Detroit Die Casting Exposition ...	1249	Feldpausch & Co. (England), Ltd.: Automatic Screw Assembling Machine ...	1417	Flame, Gas, Process, Comparison of Metal Spraying by the Plasma-arc Process and the ...	1423	
476	Factor Equipment ...	1069	Fellows Gear Shaper Co.: Fellows-England Gear Shaping Machines for Yugoslavia ...	1054	Flame-plated Honing Mandrels ...	1238	
1335	Gauge and Tool and Power Press, Sixth ...	857	No. 4 BGF Gear Finishing Machine ...	198	Flame Profiling Components for Bar and Sheet Metal Working Machinery ...	247	
1420	Japan International Machine Tool Fair ...	1354, 1407, 1469	No. 8TIM Pitch Checking Instrument for Gears ...	652	Flame Spraying Equipment, Meteco Type 2MB Plasma-arc ...	1226	
884	Leipzig Spring Fair ...	572	Fenner, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490	Flame Spraying, New Avco Type PG 100 Plasma Gun for ...	1049	
1068	Paris Machine Tool ...	74, 307, 467	See also ...	520	Flexible Drives (Gilmans), Ltd.: Flexmaster Carbide Burrs and Air Grinders ...	516	
1450	Expanding-cutter Taper-boring Arrangement, Large ...	474	Fenster Machine Tools, Ltd. ...	318	Floors, Treatment of, for Dust Collection ...	376	
216	Expanding Machine for Accurately Sizing Missile Cases ...	723	Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302	Florimond & Chabardes: Astra Type AFC 4 Universal Tool and Cutter Grinder ...	423	
252	Expanding Motor-car Wheel Rims to Size, Machine for ...	607	Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201	Flow Turning, The Extending Field for ...	395	
269	Explosive Forming of Cones ...	1054	High-vacuum Pumps ...	1050	Flowdipper Soldering Machine, Fry's ...	1198	
1478	Explosive Forming of One-piece Thin Shells of Revolution, Die-less ...	1123	Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886	Flowdip Soldering Machine, New Fry's ...	589	
823	Exports, British Machine Tool Imports and ...	1147, 1441	Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127	Fluidized Bath, The Tecam (R) ...	1202	
216	Classified: 110, 278, 390, 558, 670, 1214, 1386		Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324	Fluidized-bed Dip-coating Technique for Investment Moulds ...	620	
1297	Exports, U.S. Machine Tool ...	1498	Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139	Fluorocarbon Slipping and Anti-sticking Agent ...	611	
269	Extruded Cold Sleeves, Production of an Axle Housing Incorporating Extruded Slugs and Castings, Production of Non-ferrous Forgings from ...	987	Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490	Fobco Type 7-Eight Drilling Machine Foil Pack for Ball Bearings, New ...	1060	
1069	Extrusion of Steel, Hydraulic Presses for the Cold ...	358	See also ...	520	Folkes, John, (Lye Forge), Ltd.: Visit to Kidderminster Works of ...	965	
269	Extrusion of Steel and Other Materials, Further Developments in the Practice of the Cold ...	1051	Fester Machine Tools, Ltd. ...	318	Forestal Industries (U.K.), Ltd.: Cyanide-free Cleaner ...	962	
269	Extrusion of Steel and Other Materials, Further Developments in the Practice of the Cold ...	1051	Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302	Drawcot Dry-film Lubricants ...	1419	
1069	Die-less Explosive Forming of One-piece Thin Shells of Revolution ...	1123	Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490	Idritite No. 14E Al-Coat ...	715	
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886	Forging Machines, Etchells Multiforge Horizontal ...	1243	
			High-vacuum Pumps ...	1050	Forging Machines, Eumeco Automatic Roll ...	317	
			Fenster Machine Tools, Ltd. ...	318	Forging Machines, U.S. Industries High-energy-rate ...	154	
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			
			Ferro-Tic C Machinable Carbide, Air Gauge Spindles made from ...	1127			
			Ferro-Tic C Sintered Machinable Carbide, Drill Bushes of ...	324			
			Ferrostatics, Ltd.: 8-impression Mould for Production of Guttering Joints in Rigid P.V.C. New Factory ...	1139			
			Ferre, J. H. & Co., Ltd.: Cardex Coupling for Incorporation in Donowitz Steel-making Furnace ...	1490			
			See also ...	520			
			Fester Machine Tools, Ltd. ...	318			
			Ferguson Radio Corporation, Ltd.: Producing "Cable Preforms" for T.V. Sets ...	302			
			Ferranti, Ltd.: Co-ordinate Inspection Machines ...	1201			
			High-vacuum Pumps ...	1050			
			Ferro-Technique, Ltd.: Ferro-Cut Unit Milling Heads ...	886			

PAGE		PAGE
Forging. The Production of Stepped Workpieces by Transverse Roll ...	1219	
Forging, Rough-turning a Large, on Noble & Lund Centre Lathe ...	965	
Forgings. Machining Steel, with Throw-away Clamped-tip Tools ...	773	
Forgings, Production of Non-ferrous, from Extruded Slugs and Castings ...	987	
Forming. Upset, Fielding 800-ton Hydraulic Press for Production of Form Grinding Machine. Monahan-Hobson Tangential-feed ...	546	
Form Master Grinding Fixture Set up on Jones & Shipman Machine ...	246	
Form-rolling Machine. Reed Thread-and ...	538	
Form Turning and Facing Resinoid-bonded Pipes. Set-up for ...	44	
Forming of Cones. The Explosive ...	1054	
Forming. High-energy Rate ...	1032	
Forming Machine. Barmax Fully-automatic Electro-chemical Metal Forming Machine. Torrington Verti-Slide ...	593	
Forming One-piece Hollow Aluminium Vessels ...	733	
Forming of One-piece Thin Shells of Revolution ...	1123	
Forming Operations. Advantages of High Speed in Metal ...	115	
Forming Press. Large Vernon-Wheelon Hydraulic ...	1312	
Forming Sheet Metal Shapes by Freezing Water ...	1458	
Forming Technique. Jewellform ...	1072	
Forming U-bolts. Wild Barfield Machine for ...	1301	
Fortuna - Werke Piston Grinding Machines ...	229	
Four Centre Lathe ...	39	
Foundry Equipment, Ltd.: Composite Moulding Machine for Operating Shaw Process ...	354	
Foundry for the Production of Castings for Paper-making Bolster Fox & Offord Universal Bolster Mould for Production of Electrical Parts Incorporating ...	698	
Fraser, Andrew (Ealing), Ltd.: Set-up for Milling a Locating Surface on a Machine Tool Bed on Cincinnati Hypno Plano-Milling Machine ...	360	
Set-up on Manurhin Polygon Profile Grinder for Production of 3-lobed Bore in Reactor Spider ...	248	
"Free-Flex" Cross-spring Pivot Bearing ...	910	
Freezing Water. Forming Sheet Metal Shapes by ...	1458	
French Control System. Recent Developments in the C.R.S.I.M. ...	821	
Fritty, J. C.: Advantages Obtained from the Use of Cast Tools ...	430	
Frontmatic Type PLA 35 Lathe. Osaka ...	1291	
Frye Machine Tool Co., Ltd. ...	960	
Fry's Metal Foundries, Ltd.: Flowdipper Soldering Machine ...	1198	
Flowsolder Soldering Machine ...	589	
Fuji Automatic Vertical Honing Machine ...	1473	
Fuji Hydraulically-operated Lathes ...	1291	
Fuji Tsushinki Seizo Co., Ltd.: Fanuc Control System ...	1354, 1355	
Fulmer Research Institute. Open Day at ...	152	
Furnace Application. Electrothermal Flexible ...	30	
Furnace. Consumable Electrode Argon-arc ...	152	
Furnace. A Continuous Annealing Furnace. Rotary-hearth Atmosphere-controlled Electric ...	907	
Furse, J. E., A.M.I.Mech.E.: A High-magnification Optical Projector ...	181	
Fuses, Testing and Sorting Cart-ridge-type, U.S. Industries Equipment for ...	497	
Futurmill Conversions, Ltd.: Demonstration at Alltools, Ltd. ...	1082	

## G

G.C.U. Red Ring Crown Shaving Attachment ...	1119
G.K.N. Load Indicating Bolts ...	1361
G.M.T. Automatic Facing and Boring Heads ...	1377
G.S.P.-Matic Tape-controlled Boring and Milling Machine ...	99
G.S.P. Type 205N Drilling and Boring Machine ...	307
GWD 346 Cleaning and Degreasing Liquid ...	824
Gallic 14 Centre Lathe. Mondiale ...	424
Galtona Wedgmil Face Milling Cutter ...	778
Galvanized Steel Panels. Production Line for Bond-coating and Painting Gambin Type 2M Universal Milling Machine ...	468
Gamet Products, Ltd.: G.M.T. Automatic Facing and Boring Heads ...	1377
Gardner-Denver Co.: Wiring Terminal Panels under Numerical Control ...	361, 500
Garringtons, Ltd.: Induction Hardening Machine for Axle Shafts ...	163
Induction Heating for the Assembly and Removal of Large Bearing Rings ...	90
Gas Flame Process. Comparison of Metal Spraying by the Plasma Arc and the ...	1423
Gascolines (Reading), Ltd.: Precision Stainless Steel Castings for Milling Machines ...	133
Gating of Aluminium Alloy Die Castings ...	1255
Gauge. Amar Accuread Micrometer Height ...	782
Gauge. Bausch & Lomb Type DR-25B Optical ...	94
Gauge. "British Indicators" Dial Indicator Snap ...	690
Gauge. Chesterman Type 600 Caliper Gauge. Electrically-operated Portable Height ...	1116
Gauge. Federal Electronic Centring Gauge. Mercer Type 226 Cylinder Bore, and 2-point Setting Piece ...	695
Gauge. Mueller Groove Checking ...	591
Gauge. P.V.E. Micro-Bar Micrometer Setting Height ...	700
Gauge Production at Headland Gauges, Ltd. ...	953
Gauge. Revlac Dial, Thread Comparator Gauge Spindles Made from Ferro-Ti-C Machinable Carbide. Air ...	1127
Gauge. Teddington Adjustable Air Gap ...	1199
Gauge. Tolimit Caliper-type Thread Gauge and Tool Makers' Association: Conference on Export ...	1209
Sixth Gauge and Tool and Power Press Exhibition ...	676, 778, 837, 847, 857
Exhibitors: Aldridge Tool & Engineering Co., Ltd. ...	695
Amar Tool & Gauge Co., Ltd. ...	782
Baty, J. E., & Co., Ltd. ...	679
Benson Verniers, Ltd. ...	689
B.H.P. Machine Tool Co., Ltd. ...	706
Birmingham Tool & Gauge Co., Ltd. ...	680
Bowers, T., & Co., Ltd. ...	784
Brasshouse, Feter, Ltd. ...	780
Bristol Tool & Gauge Co., Ltd. ...	698
British Aero Components, Ltd. ...	785
British Indicators (Sales), Ltd. ...	690
Brooke Tool Manufacturing Co., Ltd. ...	783, 847
Broomfield Engineering Co., Ltd. ...	690
B.S.A. Small Tools, Ltd. ...	786
Capp, A., & Sons, Ltd. ...	779
Chesterman, James & Co., Ltd. ...	683
Clare Collets, Ltd. ...	692
Clarkson (Engineers), Ltd. ...	701
Coventry Gauge & Tool Co., Ltd. ...	676, 778
Cowlishaw, Walker & Co., Ltd. ...	705
Crawford Collets, Ltd. ...	694

Designex (Coventry), Ltd. ...	848
Desoutter Brothers, Ltd. ...	700
De Vries, L., & Son, Ltd. ...	702
Engineering Products, Ltd. ...	696
Express Tools, Ltd. ...	696
Ferrotec, Ltd. ...	780
Firth Brown Tools, Ltd. ...	686
Fox & Offord, Ltd. ...	686
Gay's (Hampton), Ltd. ...	784
Goulder, J., & Sons, Ltd. ...	691
Gray, C. A., Ltd. ...	786
Grey & Rushton (Precision Tools), Ltd. ...	695
Hardinge Machine Tools, Ltd. ...	682
Haycock Gauge & Tool Co., Ltd. ...	848
Horstmann Gear Co., Ltd. ...	779
Impregnated Diamond Products, Ltd. ...	699
Indusmond Diamond Tools, Ltd. ...	685
Johansson, C. E., Ltd. ...	690
Jones, A. A., & Shipman, Ltd. ...	681
Keir, Alan, Ltd. ...	782
Kearworthy Jig & Press Tool Co., Ltd. ...	697
Lapointe Precision Engineering Co., Ltd. ...	696
Lenchs (Birmingham), Ltd. ...	685
Leytonstone Jig & Tool Co., Ltd. ...	692
Lloyd, Richard, Ltd. ...	778
London & Scandinavian Metallurgical Co., Ltd. ...	682
Marley, W. H., & Co., Ltd. ...	700
Marwin (Anstey), Ltd. ...	698
Mercer, Thomas, Ltd. ...	695
Middlesex Gauge & Tool Co., Ltd. ...	738
M.P.J. Gauge & Tool Co., Ltd. ...	696
Optical Measuring Tools, Ltd. ...	683
Pilot Plug Gauge Co., Ltd. ...	683
Pitter Gauge & Tool Co., Ltd. ...	699
Platarg Engineering, Ltd. ...	786
Press Equipment, Ltd. ...	785
Protolite, Ltd. ...	687
Fryor, Edward, & Son, Ltd. ...	781
Purefoy Unit Tooling, Ltd. ...	695
Redman Tools & Products, Ltd. ...	699
Reliance Precision Tools, Ltd. ...	683
Rhodes, Joseph, & Sons, Ltd. ...	703
Rockwell Machine Tool Co., Ltd. ...	704
Rubert & Co., Ltd. ...	689
Sanderson Instruments (Huddersfield), Ltd. ...	688
Shardlow Micrometers, Ltd. ...	697
Shaw, A., & Son (Diamonds), Ltd. ...	694
Sheffield Twist Drill & Steel Co., Ltd. ...	687
Sigma Instrument Co., Ltd. ...	677
Smiths Jig & Tool Co., Ltd. ...	783
Solex (Gauges), Ltd. ...	685
Taylor & Challen, Ltd. ...	783
Taylor, George (Engineers), Ltd. ...	787
Taylor & Jones, Ltd. ...	781
Toolmasters, Ltd. ...	688
Triefus Industries, Ltd. ...	782
Turner Bros. (Birmingham), Ltd. ...	707
Udal, J. P., Ltd. ...	705
Van Moppes, L. M., & Sons (Diamond Tools), Ltd. ...	848
Vero Precision Engineering, Ltd. ...	678
Villiers (Tool Developments), Ltd. ...	687
Watson, Manasty & Co., Ltd. ...	701
Wendley Bros., Ltd. ...	693
Yorkshire Precision Gauges, Ltd. ...	785
Gauge. "Yorkshire Precision" Type C Adjustable Miniature Snap Gauges. Broomfield Tungsten Carbide ...	690, 918, 1027
Gauges. Chatillon Dial-type Push-pull Load Measuring ...	91
Gauges. Matrix Slip, to DIN 861 Specification ...	1437
Gauges. New Teddington Dial-type Thermometers and Pressure ...	1055
Gauging Equipment. Solex Cyber-metric Air, for Relay Pole Pieces ...	416
Gauging Machine. M.P.J.-Sheffield Air-operated ...	697
Gauging Machines. Tokyo Delta High-speed Automatic ...	1415
Gauging and Sorting Machine for Valves. O.M.T.-Etamic Automatic ...	1128
Gauging. Symposium on Air ...	1083
Gauging Units. Stop-Cote Caliper ...	78

Gay's ...	78
Hall ...	702
Trace ...	696
Gear ...	780
Pidof ...	686
Mach ...	784
Gear ...	691
Hobb ...	786
Rough ...	695
Gear C ...	682
Cater ...	848
ment ...	779
Gear C ...	699
Univer ...	685
Metal ...	690
Gear C ...	681
Gear F ...	782
No. 4 ...	697
Gear G ...	696
Revel ...	685
Gear G ...	692
Hydra ...	778
Hydra ...	682
Gear H ...	700
Hydra ...	698
Seiwa ...	695
Gear H ...	738
Type I ...	696
Optical ...	683
Pilot ...	683
Pitter ...	699
holding ...	786
Gear J ...	785
for Pr ...	687
Gear K ...	781
Pe ...	695
"Gear Sh ...	699
Diseng ...	683
Cutter ...	703
Gear Sh ...	704
slavia ...	689
Gear Sh ...	688
Machin ...	697
Gear Sh ...	694
Type 5 ...	687
Gear Sha ...	677
Ring ...	783
Flank ...	685
Gear-toot ...	783
burr ...	787
Gear Tr ...	781
Design ...	688
Gear Tr ...	782
Change ...	705
Gear Unit ...	848
speed ...	678
Gearbox ...	687
for Pro ...	701
Gearing ...	693
Gears. A ...	785
for Idl ...	785
Gears. A ...	785
the Mar ...	690, 918, 1027
Gears. A ...	91
Selectin ...	1437
Gears. I ...	1055
Checkin ...	416
Gears. G ...	697
for 24-h ...	1128
Machin ...	1083
Gears. 5 ...	78
General D ...	
Some T ...	
in the F ...	
the Att ...	
General ...	
Magne ...	
bling T ...	
ponents	

PAGE		PAGE		PAGE		PAGE	
848	Gay's (Hampton), Ltd.:		General Electric Co., U.S.A.:		Grinding Machine, Bennett Type		
700	Hallwell Mark 3 Profile Form		Beetle Manipulator ... ..	597	SG-1-14 Single-head Spring-end ...	1434	
702	Trace Projector ... ..	784	Comparison of Metal Spraying by		Grinding Machine, Bergstrom Uni-		
693	Gear Blanks. Set-up on Pittler		the Plasma-arc and Gas Flame		versal Twist Drill ... ..	884	
698	Pidofat Chucking Automatic for		Processes ... ..	1423	Grinding Machine, Boyar-Schultz		
780	Machining ... ..	604	Control Systems ... ..	990, 993, 1073	Challenger 6-18 Hydraulic Surface	1262	
686	Gear Blanks, Staehely Type SH 510		Electron Beam Welding without		Grinding Machine, Brumeca Cylind-		
784	Hobbing Machine Set Up for		Vacuum ... ..	1180	rical ... ..	311	
691	Roughing and Finishing Cuts on ...	606	Equipment for Drilling Complex		Grinding Machine, Bryant Long-bed		
786	Gear Cases, Machining of Bevel, for		Printed Wiring Boards ... ..	1286	Internal ... ..	371	
	Caterpillar Earth-moving Equip-		Production of Gas Turbine Shafts		Grinding Machine, Christen Type		
695	ment ... ..	1152	by Shear Spinning ... ..	698	AF-80 Cutter ... ..	885	
682	Gear Checking Machine, IMO 200		Giddings & Lewis Machine Tool Co.:		Grinding Machine with Electrolytic		
683	Universal ... ..	572, 667	Chip Collection on a Skin Milling		Equipment, Automatic Milling		
779	Gear Components made by Powder		Machine ... ..	189	Cutter ... ..	644	
	Metallurgy ... ..	760	Programming for Point-to-Point		Grinding Machine, Exe Surface ...	163	
685	Gear Cutting Machines, Japanese ...	1473	Numerical Control ... ..	521	Grinding Machine, Farrell-Birming-		
690	Gear Finishing Machine, Fellows		Gilling Machine, Rasmussen Tube ...	1120	ham Numerically-controlled Roll ...	993	
681	No. 4 BGF ... ..	198	Girdstone Pumps, Ltd.:		Grinding Machine, Grindex Universal		
782	Gear Finishing Machine, Michigan		Pumps for use with Corrosive		Tool ... ..	95	
	Type 999-A ... ..	830	Fluids ... ..	359	Grinding Machine, Heald Type 271	1323	
697	Gear Generator, ENIMS Type 5232		Girton, W. Z.:		Grinding Machine, Heald Type 276		
	Bevel ... ..	144	Automatic Metal Transfer Methods		Plain ... ..	1323	
696	Gear Grinding Machine, Okamoto ...	1478	for Magnesium ... ..	1258	Grinding Machine, Heald Type 273A		
685	Gear Hobber, Akashi Servo-control-		Gisholt Machine Co. (Gt. Britain),		Universal Internal ... ..	1322	
690	led Precision ... ..	1474	Ltd.:		Grinding Machine, Herbert Hunt		
778	Gear Hobbing Machine, David Brown		Simplimatic Machines for Machin-		Drill Point ... ..	964	
682	Hydrax V Production ... ..	908	ing Large Brake Drums ... ..	535	Grinding Machine of High Accuracy,		
700	Gear Hobbing Machine with		Glacier Metal Co., Ltd.:		Features of the Design of a ...	818	
698	Hydraulic Crowning Mechanism,		Tilting Pad Thrust Bearings ...	1318	Grinding Machine, Hitachi Surface	1471	
695	Seiwa ... ..	1475	Glass-filled Nylon ... ..	765	Grinding Machine, Kampf Type S.IV		
683	Gear Hobbing Machine, Kolomensk		Glydo Automatic Transfer System,		Bench-mounted, for Sharpening		
696	Type 5342 ... ..	143	Demonstration of the ... ..	1489	Cutters for Die and Mould Copy-	269	
683	Gear Hobbing Machine, Komso-		Golden Arrow High-speed Steel Twist		milling Machines ... ..		
683	molets Type 5K 324 Universal ...	147	Drills, B.S.A. ... ..	786	Grinding Machine, Kharkov Type 3A		
696	*Gear Hobbing Machine, Work-		Gmel Type TM 36 Hydraulic Shaper	146	151 External Cylindrical ... ..	142	
785	holding Arrangement for a ...	892	Goodman, George, Ltd.:		Grinding Machine, Landis-Gendron		
687	Gear, Japanese Metal Powder Die		Insulgrit Type 3 Blind Fastener ...	73	Type 618 Horizontal-spindle Sur-		
781	for Producing a Duplex ... ..	1300	Goodyear Tyre & Rubber Co. (Gt.		face ... ..	312, 446	
685	Gear, Perbury Variable Speed 533,	793	Britain), Ltd.:		Grinding Machine, Manufacture,		
699	*Gear Shaping Machine, System for		Use of Overhead Conveyor in Vul-		Operations in, at the Works of		
683	Disengaging the Work from the		canizing and Moulding Department	1043	G. W. S. Burdett & Co., Ltd. ...	653	
703	Cutter on a ... ..	45	Gooseneck-type Injection Arrange-		Grinding Machine, Mona-Hobson		
704	Gear Shaping Machines for Yugo-		ments for Die Casting Machines ...	654	Tangential-feed Form ... ..	546	
689	slavia, Fellows-England ... ..	1054	Gorini, Mario:		Grinding Machine, Myford MG 12-H		
688	Gear Shaving Cutter Re-grinding		Recent Developments in the Italian		Hydraulic Cylindrical ... ..	1113	
694	Machine, Mitsubishi ... ..	1473	Machine Tool Industry ... ..	1320	Grinding Machine, Nippel Shoe-		
697	Gear Shaving Machine, Agregatnik		Gorton, George, Machine Co.:		centreless Automatic ... ..	1469	
694	Type 5M 714 ... ..	148	Jig Boring and Milling Machine ...	1200	Grinding Machine, Nippel Type		
687	Gear Shaving Machine, Crown Shav-		Gotha Initial-pinch Type Bending		CGF-A 40/50 Angular Wheelhead		
677	ing Attachment for G.C.U. Red		Rolls ... ..	23	Cylindrical ... ..	1297	
783	Gear Testing Equipment, NEL Single		Gouldner No. 3V Lead Tester for		Grinding Machine, Norton 18- by		
685	Flank Electronic ... ..	1420	Gears up to 24-in. Diameter ...	691	106-in. Roll ... ..	893	
693	Gear-tooth De-burring Unit, Shave-		Government Proposals for Industrial		Grinding Machine, Re-, Mitsubishi		
703	burr ... ..	422	Training ... ..	1447	Gear Shaving Cutter ... ..	1473	
787	Gear Train, Some Details in the		Grading Bearing Rings, Rollers and		Grinding Machine, Samand Type		
781	Design of the Simple Epicyclic ...	185	Balls, Czechoslovakian Machines		FG 4-station Universal Tool ...	537	
688	Gear Trains, The Arrangement of		for Inspecting and ... ..	578	Grinding Machine, Sparatron GFO-		
707	Change ... ..	477	Grafenstaden Type AR 102A Planer-		E200 Electrolytic ... ..	554, 667,	
703	Gear Unit, Carter Type F13 Variable-		type Horizontal Boring Machine ...	309	Grinding Machine, Strakonice Auto-	574	
684	speed ... ..	722	Granby, Paul, & Co., Ltd. ...	1312	matic Internal ... ..		
678	Gearbox Shafts, Russian Link-line		Gravity Die Casting Practice, New		Grinding Machine, TOS Hostivar		
678	for Production of Tractor ... ..	253	Trends in ... ..	489	Twist Drill ... ..	576	
691	Gearing, The Development of Circarc		Greene, Mr. Felix, Photograph of		Grinding Machine, Toyo Cylindrical	1470	
707	Gears, A Bending Stress Criterion		Chinese Lathes taken by ... ..	551	Grinding Machine, Uruga-Shibaura		
693	for Idler ... ..	217	Gresham & Craven Ltd. (see West-		Slideway ... ..	1471	
785	Gears, A Cold Rolling Process for		inghouse-Hobbs Ltd.)		Grinding Machine, Vollmer Type		
1027	the Manufacture of ... ..	1362	Grigs, P. B., & Sons, Ltd.:		FSM Automatic ... ..	109	
91	Gears, A Computer Programme for		Installation of Vickers-McKaymatic		Grinding Machine, Wickman		
1437	Selecting Change ... ..	348	Die Shear Line for Metal Strip ...	70	Scrivener Type 36 DPG Duplex, for		
1055	Gears, Fellows No. 6TIM Pitch		Grimston Electric Tools, Ltd.:		Brake Discs ... ..	87	
416	Checking Instrument for ... ..	652	Twin-head Drilling Machine ...	1115	Grinding Machine, Winslo-Matic		
697	Gears, Gouldner No. 3V Lead Tester		Grinders, Air, Flexmaster Carbide		Type 100-C Automatic Twist Drill		
1055	for 24-in. Diameter ... ..	691	Burrs and ... ..	516	Point ... ..	97, 388	
416	Gears, Large Toyo Haguruma		Grindex Universal Tool Grinder ...	95	Grinding Machine, ZB Mark 2 Twist		
697	Machine for Cutting Spiral Bevel	1476	Grinding Accurate Internal Part-	1403	Drill ... ..	1317	
1415	Gears, 5-stage Press Tools for ...	824	spherical Surfaces ... ..	198	Grinding as a Stock Removal Process	451	
1128	General Dynamics/Astronautics:		Grinding Attachment, Guys Drill ...	1197	Grinding, Vertical Contour-, and		
1083	Some Typical Operations Involved		Grinding Equipment, Vickerman		Multi-purpose Machine ... ..	1131, 1268	
78	in the Production of Bulkheads for		Tool and Cutter ... ..	1197	Grinding Wheel, Carborundum 5A-		
	the Atlas Missile ... ..	550	Grinding Fixture, Form Master, Set	246	V50 Precision ... ..	127	
	General Dynamics Corporation,		Up on Jones & Shipman Machine ...	196	Grinding Wheel and Work, Matrix		
	General Atomic Division:		Grinding Fixtures for Coventry Dies	969	Equipment for Indicating Moment		
	Magneform Machine for Assem-		Grinding and Lapping Machine,		of Contact between ... ..	778	
	bling Tubular Aluminium Com-		Kombi-Schiff Tool ... ..	829	Grinding Wheels, Norton 23 Alundum	941	
	ponents by Swaging Action ...	734	Grinding Machine, Astra Type AFC 4		Grinding Wheels, Van Moppes Dia-		
			Universal Tool and Cutter ... ..	422	trim Dressing Tools for ... ..	849	
			Grinding Machine, Automatic Load-	1296	Grit Blasting Cabinet, Berk ...	835	
			ing Equipment on Nippel Type		Groove Checking Gauge, Mueller ...	591	
			CGE 10/30 ... ..	142	Grooves, Machining Oil, with a		
			Grinding Machine with Automatic		Router ... ..	13	
			Loading Equipment, Stankollnia		Grooving Machine, Czechoslovakian		
			Centreless Internal ... ..	97	Spark-erosion ... ..	577	
			Grinding Machine, Bennett Multi-				
			spindle Spring ... ..				

PAGE		PAGE		PAGE	
Grooving, Oil, with Wadkin Routing Machines ...	132	Heald Machine Co., U.S.A.: Grinding Accurate Internal Spherical Surfaces ...	1403	Hird-Brown, Ltd.: Rilo-Detektor Leak Detector for Halogen Gases ...	70
Grotnes Machine Works, Inc.: Expanding Machine for Accurately Sizing Missile Cases ...	723	Tool-Tronic Indicating Equipment for Tool Setting ...	40	Wall-mounted Photo-cell Receiver and Projector Housing ...	776
Grumman Aircraft Engineering Corporation: The Brazing of Stainless Steel Honeycomb Panels for Aircraft ...	716	Heald Machines, Ltd.: Machine Tool Demonstration ...	1322	Hiroshima Innocenti-Berthiez Combined Boring and Milling Machine	1289
Guest Keen & Nettelfields (Midlands), Ltd.: Load Indicating Bolts ...	1361	Heap, Joshua, & Co., Ltd.: Threading Machine Set Up for Form Turning and Facing Resinoid-bonded Pipes ...	44	Hitachi Seki Type 2ML-V Vertical Milling Machine ...	1080
Guillotine Shears. Pearson VR Electro-hydraulic ...	1242	Heat Exchanger Tubes. Sciaky Automatic Welding Equipment for Finned ...	1192	Hitachi Surface Grinding Machine ...	1471
Gun for Flame Spraying. New Avco Type PG 100 Plasma ...	1049	Heat Exchangers. Machining Internal Fins in Components for ...	28	Hobbing Machine. Automatic Loading of Small Shafts on Kashifuji Type KS 250 ...	1297
Gun, 16in. Naval, Pressure Chamber for Ceramic Moulding made from a Gun Turrets for Tanks. Tape-Controlled Machine for Operations on Machine ...	1319	Heat Transfer Elements. Production of Finned ...	889	Hobbing Machine. Lees-Bradner 6-spindle ...	647
Gunner, A. M. Mem.A.S.M.E.: The Arrangement of Change Gear Trains ...	477	Heat Treatment Process. Spin-Hard Machine 12-spindle Drilling ...	294	Hobbing Machine. Precimo Type VHP High-speed ...	467
Gutro Type MP 2 Optical Projector Guttering Joints in Rigid P.V.C. Ferrostatic 8-impression Mould for Production of ...	780	Heating, Induction, for the Assembly and Removal of Large Bearing Rings ...	90	Hobbing Machine. Stately SH 510, Set Up for Roughing and Finishing Cuts on Gear Blanks ...	606
Guymann, H. A.: Automation of the Die Casting Process ...	1252	Heatrae, Ltd.: Generating Steam from Test Equipment ...	158	Hobbing and Thread Milling Machine. Lees-Bradner Type HH Mark III-C ...	592
Guys (Handtools), Ltd.: Circular Saw Sharpening Attachment ...	651	Hedin, Ltd.: Conveyor-fed Soldering Oven ...	1422	Hobson, H. M., Ltd.: Tangential-feed Form Grinding Machine ...	546
Drill Grinding Attachment ...	198	Hedley, Robert: A Computer Programme for Selecting Change Gears ...	348	Hockley Chemical Co., Ltd.: Developments in the Application of Lacromatic Vibrators for Finishing Metal Parts ...	483
H		Heeb, H. B.: Programming for Point-to-Point Numerical Control ...	521	Hogan-Billesholmes AB: Powder Metallurgy as a Production Technique for Mechanical Components ...	942, 1069
H.E.B.-Cri-Dan Lathe ...	77	Heenan & Froude, Ltd.: Two Large Dynamometers for U.S.S.R. ...	1435	Hogley Bros.: Automatic Machine for Profile Flame-cutting Components from Bar ...	314
H.E.B. Transipole Lathe ...	77	Hellermann, Ltd.: Helashrink Cable Sleeves and Markers ...	1075	Pillar-type Drilling Machine Equipped for Automatic Control of Drive Motor ...	1288
H.M.A. Machine Tools, Ltd.: Hungarian Machine Tools ...	1436	Helmet, Til-Lucent Translucent Shotblast ...	350	Set-up for Producing Special Screws and Bolts ...	661
Hacksaw. Wicksteed Automatic Bar Feed Unit for Power-driven Haesler Sales Division, Adam Engineering Co., Ltd. ...	831	Hemispherical Forms. Hepworth Copying Equipment for Turning ...	540	Hogue Double-draft Wire Drawing Attachment. Ajax ...	886
Hahn & Kolb (Great Britain), Ltd.: Machine Tool Exhibition ...	377	Hense Manufacturing Co.: "Water Welder" ...	1203	Koist. Use of Lo-Hed. In Works of Goodyear Tyre & Rubber Co. ...	1043
RE 25 Capstan Lathe ...	377	Hepworth Iron Co. (Engineering), Ltd.: Copying Equipment for Turning Hemispherical Forms ...	540	Holder for Dial Test Indicators. Easycheck Universal ...	421
Halliwel Mark 3 Profile Form Trace Projector ...	784	for Lathes ...	828	Holding Several Parts. Milling Fixture for ...	890
Hamilton, W. R. (Plymouth), Ltd.: Consignment of 12-in. Vibratory Hoppers ...	162	Herber High-speed Tapping Machines ...	1196	Holding Timing Sprockets Set Up on Lapointe Broaching Machine. Fixture for ...	698
Hammer, Water, Process ...	1052	Herbert, Alfred, Ltd.: Demonstration of Threading Techniques ...	1021	Hole Cutter. Mason Master Trepanning ...	368
Hand Tool. Eclipse No. 44 Multiple Handling Equipment for Pistons. Automated ...	117, 172, 228	Fellows-England Gear Shaping Machines for Yugoslavia ...	1054	Hole-punching Units. Waleen-Strippit Holes. Cross Schrader Automatic Air-operated Machine for Piercing Four ...	471
Handy Angle, Ltd.: "Handy Bin" Storage Equipment ...	90	Grinding Fixtures for Coventry Dies ...	196	Hollow Aluminium Vessels. Forming One-piece ...	812
Hard Facing Alloys for Deposition by Gas and Arc Welding ...	855	Herbert/DeVlieg Jig Mills for Batch-production at Boulton Paul Aircraft, Ltd. ...	766	Holroyd, John, & Co., Ltd., Centenary of ...	733
Hardening Caliper Jaws. Induction ...	805, 929	Herbert/Fette Thread Rolling Heads ...	966, 1090	Holroyd, John, & Co., Ltd., Centenary of ...	1383
Hardening Crankshafts. Czechoslovak Machines for Induction ...	1044	Production of Microbore Tools ...	80, 452, 1090	Honeycomb Panels for Aircraft. The Brazing of Stainless Steel ...	716
Hardening Machine for Axle Shafts. Garringtons Induction ...	193	Threading Exhibition ...	777	Honing Machine. Fuji Automatic Vertical ...	1473
Hardfacing Process. E.S.T. Tuffest ...	595	See also 40, 199, 374, 652, 935, 958, 1325		Honing Machine. Micromatic Type 5HXH-16 Horizontal ...	98
Harding Machine Tools, Ltd.: New Exeter Works ...	159	Hestair, Ltd.: Magnoptic 6/60 Optical Comparator ...	994, 1194	Honing Machine. Perfection Transfer, for Cylinder Liners ...	487, 556
Type DSN 59R Second-operation Turret Lathe ...	159	Hettich, Urago, Milling and Boring Machine ...	1409	Honing Machines. Chaphone ...	37
Harper, H.M., Co.: Use of Hydraulic Shearing and Cutting-off Units ...	727	High-energy Rate Processes ...	1052	Honing Mandrels. Flame-plated ...	1238
Harrison, P. W., B.Sc. (England), A.M.I.Mech.E., A.C.G.I.: A High-magnification Optical Projector ...	181	High Precision Equipment Ltd.: British-built Baird Machines ...	612	Hoppers. Consignment of Hamilton 12-in. Vibratory ...	162
Harvey, G. A. (London), Ltd.: Large Boller Drums for Komati Power Station ...	814	High Speed Service Tool Co., Ltd.: Set-up on Archdale No. 2 High-speed Vertical Milling Machine ...	579	Hordern-Richmond Ltd. ...	541, 648
Hayes Engineers (Leeds), Ltd.: Tracemaster Machine for Milling Chain Block Wheels ...	956	Set-up on Moore-Catmur No. 2 Jig Grinding Machine for Finishing Apertures in 1-in. Thick Split Die ...	579	Hornamill Machine Tool Co., Ltd.: 3-way Lathe Attachment ...	1118
Head, Dex Multi-spindle, and Work-holding Fixture Assembly for Drilling Operations on Cylinder Heads ...	848	Hilger & Watts, Ltd.: Polyprint 3-metre Grating Polychromator ...	873	Hotpot Washing Machines. Producing ...	1448
Headland Engineering Developments, Ltd. ...	891	Surface Finish Microscope ...	291	Houdaille Industries, Inc.: Sheet Metal Punching Machine with Tape Control ...	729
Headland Gauges, Ltd.: Gauge Production ...	953	See also ...	138	Housing for a Photo-electric Viewing Head. Elcontrol Rectangular ...	481
		Hill, Walter P.: Numerically-controlled Bend-O-Matic Tube-bending Machine ...	1416	Howard, Stanley, Ltd. ...	448
				Howe Sound Co.: Advantages Obtained from the Use of Cast Tools ...	430
				Huffed Shear Spinning Machine 598, 737	
				Hughes Aircraft Co.: Co-ordinate Setting Work Table ...	594
				Development Work with Lasers ...	1310
				Videosonic Teaching Equipment ...	823



[illegible]

PAGE		PAGE		PAGE	
Keyways, Cutting 1/2- by 1/2-in., in Heavy Drive Shafts ...	247	Lathe, Craven Pit-type, for Re-turning Railway Wheels ...	1431	Letters to the Editor:	
Kharkov Type 3A 151 External Cylindrical Grinding Machine ...	142	Lathe, Crouzet CC530 ...	80	Bending Stress Criterion for Idler Gears ...	217
Kiernan, W.: Automatic Milling Cutter Grinding Machine with Electrolytic Equipment ...	644	Lathe, Cumbre Type 026 Centre ...	194	Broomfield Tungsten Carbide Gauges ...	1027
Kinetrol, Ltd.: Air-operated Actuator ...	321	Lathe, Ducre Copying ...	79	Die Casting Supplement 1937-1962 Feeding Parts for Automatic Assembly ...	217, 329, 499
Continuous-rotation Dashpot ...	1488	Lathe, Feinbau Type PM 1 Finishing ...	378	Importance of Roundness Measurements ...	218
Kingsbury, Geo. (Machine Tools) Ltd. ...	960	Lathe, The Fischer 5,000th Copying ...	1144	Institute for Advanced Studies in Engineering Sciences ...	330
Kingsland Engineering Co., Ltd.: Flame Profiling Components for Bar and Sheet Metal Working Machinery ...	247	Lathe, Forza Centre ...	39	Re-sinking Die Blocks with Carbide Cutters ...	550
Type D 50 Bar and Angle Cropping Machine ...	640	Lathe, Greasing a, at Wuhan Heavy Machine Tool Plant ...	551	Unit Construction Jig and Fixture Service ...	663
Kirkpatrick, J. S.: Present State and Prospects of Magnesium Die Casting ...	1257	Lathe, H.E.B.-Cri-Dan ...	77	Lewis, R. S., & Co. ...	1117
Kirov Type 675 Toolroom Milling Machine ...	147	Lathe, Hahn & Kolb RE 25 Capstan ...	377	Leytonstone Jig & Tool Co., Ltd.: Leytool 2-in. Stroke Slotting Machine ...	693
Kitchen, A.-D. Walker, Ltd.: New Drilling Machines ...	1062	Lathe, Hardinge Type DSN 59R Second-operation Turret ...	159	Lighting Units, Strip, Redman Automatic Equipment for Producing Components for ...	1418
Knight, C. & E., Ltd.: Automatic Impact Punch ...	1422	Lathe, Innovations Mécaniques 77 AS ...	77	Limits and Fits, Basic Principles and Accuracy of Measurement in Relation to the ISO System of ...	235
Kolomensk Type 5342 Gear Hobbing Machine ...	143	Lathe, Krasnoi Proletarii MK-70 ...	141	Lincoln Electric Co., Ltd.: Tractor-mounted Submerged-arc Welding Unit for Fabrication of Reactor Sphere ...	348
Kolomensk Type 2b 635 Horizontal Soring Machine ...	148	Lathe, Miya no Hydraulically-operated Type UJ-150 ...	1293	Linderfort, Ltd.: Linderode Spark Erosion Process Line Following Device, B.O.C. Autocan ...	427
Komati Power Station, Large Boiler Drums for ...	814	Lathe, Mondiale Gallic 14 Centre ...	424	Line, Production, for Bond-coating and Painting Galvanized Steel Panels ...	128
Kombi-Schliff Tool Grinding and Lapping Machine ...	829, 960	Lathe, Orino-Mechanical Type 1P-611 Toolroom ...	140	Ling-Temco-Vought, Inc.: Fabrication of Tanks for the Saturn C-1 Missile ...	641
Komsomolets Type 5K 324 Universal Gear Hobber ...	147	Lathe, Osaka Frontmatic Type FLA-35 ...	1291	Link Belt Co.: Spin-Hard Heat Treatment Process Link-Belt Vibrating Screen, Use of, for Reclaiming Aluminium Chips at a Transmission Factory ...	1287
Kotobuki Plano-milling Machine ...	1412	Lathe, Redesigned Smart & Brown Series L Capstan ...	1068	Link-line for Layshaft Gears, Hymatic ...	85
Krasnoi Proletarii Cam-turning Machine ...	260	Lathe, Salomé Synchromat Hydraulic Copying ...	74	Link-line for Tractor Gearbox Shaft Production, Russian ...	233
Krasnoi Proletarii Camshaft Lathe ...	257	Lathe, Shinbashi Tatsumi Type TD-C45 Automatic ...	1298	Lloyd, Richard, & Co., Ltd.: Galtona Wedgmill Face Milling Cutter ...	778
Krasnoi Proletarii MK-70 Lathe ...	141	Lathe, Shoun-Cazeneuve HB 500 Centre ...	1296	Limell, Juan Segura: 100-ton Inclinable Power Press ...	1240
Kriminians, Th.: Spot Welding in Heavy Steel Construction ...	564	Lathe, Speedy & Eynon Air-hydraulic Drilling Attachment for a Centre ...	180	Lo-Hed Holst, Use of, in works of Goodyear Tyre & Rubber Co., Ltd. ...	1043
Kunert, Ferdinand, Semi-automatic Die Casting Machine ...	491	Lathe, Taifun 380 Centre ...	1081	Load Indicating Bolts, G.K.N. ...	1361
Kus Machine Co.: Effect of Die Casting Machine Design on Casting Quality ...	1255	Lathe, Tarex TF-2 Automatic Finishing and Second Operation Lathe, Thread-whirling on Showa Type SA 5 ...	1298	Load Measuring Gauges, Chatillon Dial-type Push-pull ...	91
Kwik-Size Boring Head, Brooke-Davis ...	847	Lathe, TOS Pavazske Strojarnie Tool-room ...	575	Loading Arrangements, Automatic Transfer and, Employed by Vauxhall Motors, Ltd. ...	116
<b>L</b>		Lathe, Yoshikawa YAC-260 Programme-controlled Automatic Turret ...	1293	Loading of Small Shafts on Kashifuji Type KS 250 Hobbing Machine, Automatic ...	1297
L.C. Anchor Nuts ...	1143	Lathes, "American" Tape-controlled Centre ...	195	Loctite Products, Exhibition of ...	846
Laboratory, New BCIRA ...	160	Lathes, Fuji Hydraulically-operated Lathes, H.E.B. Transpilote ...	77	London Dial Co., Ltd. ...	184
Lacromatic Vibrators for Finishing Metal Parts, Developments in the Application of ...	482	Lathes, Hepworth Type 300 Hydraulic Copying Unit for ...	828	London & Scandinavian Metallurgical Co. 30-ton Hand-operated Double-daylight Press ...	682
Lamb, Jos., FabriFlex Equipment ...	117, 172, 228, 739	Lathes, Swift Type DR Roll-turning Laurence, J.: High-speed Turning of Torque Converter Covers ...	364	Loeca 30-ton Hand-operated Double-daylight Hydraulic Press ...	682
Lamberton & Co., Ltd.: No. 6 Cold Billet Shear ...	422	Laurence Scott & Electromotors, Ltd.: Set-up for Facing the End of a Stator Housing for a Water Pump Housing ...	326	Low-friction Plastics Material, Polymet ...	1185
Landis-Gendron Type 618 Horizontal-spindle Surface Grinder ...	312, 446	Layout Fixture for Preparing Enlarged-scale Drawings, Aldridge ...	859	Low's Calculators, Ltd.: Alpina Universal Calculator ...	245
Landis Lan-Nu-Rol Automatic Thread Rolling Machine ...	777	Layshaft Gears, Hymatic Link-line for ...	85	Lubricant, Electrolube Grease No. 20 ...	660
Landis Machine Maiden, Ltd.: Junior MB Threading Machine ...	1374	Lead Tester for Gears up to 24-in. Diameter, Goulder ...	691	Lubricants, New Drawn Dry-film Lubricator, Miniature Perma-fog ...	1419
Landis Threading Machines, Demonstration of Set-ups on ...	1021	Leak Detector for Halogen Gases, Rilo-Detektor ...	70	Luminous Compound for Dials, Tritium ...	849
Lang Gisholt Machine Co., Ltd.: Building Machine Tools ...	405	Least Squares, The Engineer and the Method of ...	403	<b>M</b>	
Simplimatic Machines for Machining Large Brake Drums ...	535	Leeds & Bradford Boiler Co., Ltd.: Autoclave for De-waxing Investment Shell Moulds ...	1372	M & M Tool and Mfg. Co.: 800 Roto-Mill Electronic Index Table ...	884
Lapmaster 24-in. Lapping Machine, New ...	830	Leen-Bradner Co.: 6-spindle Hobbing Machine ...	647	M.P.J.-Sheffield Air-operated Gauging Machine ...	697
Lapointe Machine Tool Co., Ltd.: Large Involute Spine Broach ...	1373	Type HH Mark III-C Hobbing and Thread Milling Machine ...	592	M.T.G. Unit Heads and Indexing Table ...	42
Lapointe Precision Engineering Co., Ltd.: Fixture for Holding Timing Sprockets Set Up on Broaching Machine ...	696	Leipzig Spring Fair, Machine Tools at the: Czechoslovak Machine Tools ...	572, 667	Machine Building, Possibilities for Cost Reduction in ...	798
Lapping Machine, Kombi-Schliff Tool Grinding and ...	969	East German Presses and Automatic Inspection Machines ...	19		
Lapping Machine, Moscow Type 3B 816 Universal ...	146	Russian Link-line for Tractor Gearbox Shafts ...	253		
Lapping Machine, New Lapmaster 24-in. ...	830	Russian Machine Tools ...	139		
Lasers, Development Work with, by the Hughes Aircraft Company ...	1310	Lench's Press Tool Incorporating Tungsten-carbide Parts ...	685		
Lasers, Experimental Welding with ...	1188	Lester-Phoenix 400-ton Die Casting Machine ...	1251		
Lathe Attachment, Hornamill 3-way ...	1118				

PAGE	PAGE	PAGE	PAGE
Machine for Cutting Large-diameter Asbestos Pipes ... .. 811	Machining Pontiac Components. Some Applications of Ceramic Tools for Machining Steel Forgings with Throw-away Clamped-tip Tools ... 773	Matrix Inspection Equipment with Cylindrical Height Gauge ... .. 677	Matrix Mechanical Clutches ... 26
Machine for Cutting Spiral Bevel Gears, Large Toyo Haguruma ... 1476	Machining of Surface of Plastics Moulding Machine Bed. Set-up on Planing Machine for Rough ... 246	Matrix Slip Gauges to DIN 861 Specification ... .. 1437	Matuura 3-spindle Vertical Milling Machine ... .. 1408
Machine for Drilling, Slot-milling and Stamping Small Brass Components. Special Shipcon ... .. 1221	Macron Oil. Shell ... .. 993	Max-E-Con Face Milling Cutters with Throw-away Tips. Marwin ... 998	Mayne, L. Bruce: Some Applications of Closed-circuit Television in Industry ... .. 463
Machine for Expanding Rims for Motor-car Wheels to Size ... .. 807	Madison Microliner Roller Burnish- ing Tool. B.T.G. ... .. 680	McAndrews, A. J.: Casting of Aluminium Alloy Die Castings ... .. 1255	McCauley Industrial Corporation: Propeller Production Costs Reduced by the Use of Modern Machine Tools ... .. 1181
Machine for Operations on Containers for Radioactive Materials ... .. 817	Magazine Feed Set-up for Drilling Brass Cups. Automatic ... .. 887	McGregor, Wells P.: Some Typical Operations Involved in the Production of Bulkheads for the Atlas Missile ... .. 580	McKay Machine Co.: Federal-Warco 400-cycle Resistance Welding Equipment ... .. 95
Machine for Operations on Machine Gun Turrets. Tape-controlled ... 990	Magneform Machine Set Up for Assembling Tubular Aluminium Components by a Swaging Action Magnesium. Automatic Metal Transfer Methods for ... .. 1258	Measurement, Basic Principles and Accuracy of, in Relation to the ISO System of Limits and Fits ... .. 235	Measurement of External Diameter. A Machine for the Precise ... .. 295
Machine for Piercing Four Cross- holes. Schrader Automatic Air- operated ... .. 812	Magnesium Die Casting. Present State and Prospects of ... .. 1287	Measurement of Length and Dia- meter. Conference on the Accuracy of Industrial ... .. 235	Measurement, Roundness, The Im- portance of ... .. 218
Machine Shop Equipment, Ltd.: Type 3C Centrifugal Coolant Clari- fiers ... .. 1195	Magnesium, Zinc and Aluminium. Casting Characteristics of ... .. 1256	Measuring Brinell Hardness Test Indentations. Enbeco Projector for ... .. 1069	Measuring the Diameters of Balls to a High Precision. New Method of Measuring Equipment. Citizen ... 1414
See also ... .. 1090	Magnesium Die Casting. Present State and Prospects of ... .. 1287	Measuring Head. Carl Mahr Elsen- times ... .. 1297	Measuring Head. Tri-Metron ... 1296
Machine Tool Accuracy. Advances in Machine Tool Building in Britain: Drummond Bros., Ltd. ... .. 631	Magnetic Chuck. B. & S. Micro-Mesh Magnetic Drill Stand. Trend Rack- feed ... .. 1116	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Measuring Paint-film Thickness. Optical Instrument for ... .. 630
Kearns, H. W. & Co., Ltd. ... .. 9	Magnetic Drum Separating Machine. Unimag ... .. 787	Measuring Rollers. Production of Newall ... .. 1231	Measuring Rotation Rates with Great Sensitivity. Instrument for ... 816
Lang Gisholt Machine Co., Ltd. ... 405	Magnetic Seal for Rotating Shaft ... 571	Measuring Table. Revicac Universal Inspection and ... .. 126	Measuring Unit. Delta Fulcom Diameter ... .. 1296
Newall Engineering Co., Ltd. ... 1227	Magnetic Storage Drum. Machining Operations on Mantle Components for ... .. 99	Meddings, W. J., Ltd.: 3-in. Capacity Turret Drilling Machine with Numerical Control ... 1193	Rotary Transfer Machine for Operations on a Brass Socket ... 545
Machine Tool Demonstration. B.F.S. 604	Magnopile 6/80 Optical Comparator. Hestair ... .. 994	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Special-purpose Drilling and Tap- ping Machines ... .. 1245
Machine Tool Demonstration. Heald Machine Tool Demonstration. Mar- balx ... .. 1261	Mahr Elsentimes Measuring Head ... 1297	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Megitt Engineering, Ltd.: Megga Industrial Trolley ... .. 429
Machine Tool Design and Research Conferences. Third International 788, 850, 1051, 1123, 1276	Mahr Elsentimes Measuring Head ... 1297	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Mellor, H. & T. (Engineers), Ltd.: Colling Drum ... .. 1373
Machine Tool Exhibition. Paris 74, 307, 467	Makino Jig Borer with Visual Indica- tion of Table Position. Small ... 1359	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Melt-through Welding Employed for the Production of Ribbed Rails ... 627
"Machine Tool." Expanded Defini- tion of ... .. 731	Makino Programme-controlled Verti- cal Milling Machine ... .. 1407	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Memory Drum. Dynastat ... .. 1251
Machine Tool Fair. The Japan International: 1025, 1142, 1207, 1289, 1354, 1407, 1469	Malleable Iron. Machining Charac- teristics of Pearlitic ... .. 31	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Mercer Type 226 Cylinder Bore Gauge and 2-point Setting Piece ... .. 695
Machine Tool Industry and the Home Market ... .. 227	Mandrels. Flame-plates & Housings Manifold-type Air Valves. Red Ring Multiple ... .. 1468	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Meredith, H. L.: Melt-through Welding Employed for the Production of Ribbed Rails 627
Machine Tool Industry. Recent Developments in the Italian ... 1320	Manipulator for Die Castings. The Unimate Programmed ... .. 1251	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Mercur, Ltd. ... .. 52, 104
Machine Tool Industry Research Association: Institute for Advanced Studies in Engineering Sciences ... .. 330	Manipulator. General Electric Beetle Manipulator. Large Ross Welding ... 957	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Metaducts, Ltd.: Metastream 34-in. Diameter Ad- justable Overload Slipping Clutch 103
Machine Tool Ordering—The Need for a System for Spreading the Load ... .. 970	Mantle Components for Magnetic Storage Drums. Machining ... 99	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Metal Flow in Thin-walled Die Castings ... .. 201
Machine Tool Orders 351, 498, 916, Machine Tool Research ... .. 863	Manurhin Polygon Profile Grinder. Set-up on ... .. 246	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Metal Formations, Ltd.: Metaforma Fradic Steam Cleaner 866
Machine Tool Sales (London), Ltd.: New Showrooms ... .. 1325	Maraging Heat Treatment Process Maranyl A 190 Glass-filled Nylon ... 765	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Metal Forming Operations. Advan- tages of High Speed in ... .. 115
See also ... .. 470	Marbaix, Gaston, E., Ltd.: Machine Tool Demonstration ... 1261	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Metal Powder Die for Producing a Duplex Gear. Japanese ... .. 1300
Machine Tool Trades Association: Annual Dinner Supplement to November 21 issue Industrial Trainings—a Statement 1435	See also ... .. 311, 509, 726, 825	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	Metal Speciality Co.: Forming One-piece Hollow Alu- minium Vessels ... .. 733
Machine Tools from Communist Countries ... .. 435	Marcus & Co., A. B.: Grinder Universal Tool Grinding Machine ... .. 95	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machine Tools for Contour Milling. Economics of Electronically-con- trolled ... .. 1459	Marking Connecting-rods and Caps. Special Pryor Machine for ... .. 1206	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machine Tools at the Leipzig Fair: Czechoslovak ... .. 572	Marking Machine for Bandsaw Material. Pryor ... .. 587	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
East German ... .. 19	Marking-out and Inspection Fixture. Sorensen Roto-Mike ... .. 368	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Russian ... .. 139, 253, 572	Marking Press. Pryor Type E.P.40 Hydraulic ... .. 781	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machine Tools for Washing Machine Production. Special Renault ... 1452	Marking Press. Pryor Type E.P.60 Hydraulic ... .. 420	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machining by the Anocut Process. Electrolytic ... .. 935	Marking Punches and Dies. The Production of ... .. 1096, 1186	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machining Cast-iron Brake Drums with Ceramic Throw-away Tipped Tools ... .. 775	Martin Co.: Die-less Explosive Forming of One- piece Thin Shells of Revolution ... 1123	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machining Characteristics of Pearlitic Malleable Iron ... .. 51	Martonair, Ltd.: S.1600 Series Air Valves ... .. 374	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
"Machining." Developments in Electrolytic ... .. 3	New Air Cylinders ... .. 912	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machining of Die Cast Aluminium Typewriter Frames. Transfer ... 901	See also ... .. 404, 1023	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machining, Electro-chemical, Ex- Cell-O Equipment for ... .. 887	Marwin Maxi-E-Con Face Milling Cutters with Throw-away Tips ... 698	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machining Internal Fins in Com- ponents for Heat Exchangers ... 28	Masers. Optical ... .. 1106	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machining Large Brake Drums on Gisholt Simplicatic Machine ... 535	Mason Master Trepanning Hole Cutter ... .. 368	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
Machining of Large Rolling-mill Housings, Power Press and Bolt- Heading Machine Frames and Parts of Exceptional Size. Arrange- ments for Improving Accuracy when ... .. 51	Massey-Ferguson (United Kingdom), Ltd. New Engineering Centre for Material Selection. Computer for ... 1432	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
	Matrix Circular Division Tester ... 677	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	
	Matrix Equipment for Indicating Moment of Contact between Wheel and Work ... .. 778	Measuring Machine. Savings of Inspection Time Obtained with a Co-ordinate ... .. 1429	

PAGE	PAGE	PAGE
Metall Spraying by the Plasma-arc and Gas Flame Processes. Comparison of ... 1423	Milling Internal Slots. Attachment for Milling Large Radial. Set-up on a Bridgeport Machine for ... 124	Moore's (Bournemouth), Ltd.: Airtight Enclosures for Atomic Energy Establishments ... 1326
Metalelectric Furnaces, Ltd.: Rotary-hearth Atmosphere - controlled Electric Furnace ... 907	Milling a Locating Surface on a Machine Tool Bed on a Cincinnati Hypro Plano-milling Machine ... 360	Morgan, I. G., M.A.: A Machine for the Precise Measurement of External Diameter ... 295
Metco, Ltd.: Type 2MB Plasma Arc Flame Spraying Equipment ... 1226	Milling Machine. Gambin Type 2M Universal ... 468	Morgan, R.A.P.: Further Developments in the Practice of the Cold Extrusion of Steel and Other Materials ... 1051
Metcut Research Associates, Inc.: Machining Characteristics of Pearlitic Malleable Iron ... 31	Milling Machine. Huré No. 96 N Universal ... 407	Morgenrothe, Pressenwerk, High-speed Dieing Press ... 23
Metolux Iron. Production of a Clamping Fixture from ... 262	Milling Machine. Huron Type KU 6M, Converted to Accept Par-ranti 3-dimensional Control Equipment ... 610	Morris, B.O., Ltd.: Mould-filling Equipment ... 952
Memory Drums for Digital Computers. Boneham & Turner ... 353	Milling Machine. Japanese-built Hitachi Seiki Type 2ML-V Vertical ... 1080	Moscow MB13 Thread Grinder and Universal Lapping Machine ... 146
Meyer, Roth & Pastor Wire and Strip-forming Machines. Demonstration of ... 1027	Milling Machine. Kirov Type 675 Toolroom ... 147	Motor-car Body Sub-assemblies. Steelweld Automatic Welding Machine for ... 1201
Meys Easycheck Universal Holder for Dial Test Indicators ... 420	Milling Machine for Light Alloy. Wadkin Rotary Table ... 1344	Motor-car Bumper Roll Forming Machine. Redman ... 913
Michigan Special Machine Co.: Tape-controlled Machine for Operations on Machine Gun Turrets for Tanks ... 990	Milling Machine. Makino Programme-controlled Vertical ... 1407	Motor-car Components. Some Applications of Ceramic Tools for Machining Pontiac ... 4
Michigan Tool Co.: Roto-Flo No. 3210 Vertical Serration Rolling Machine ... 1065	Milling Machine. Matuura 3-spindle Vertical ... 1408	Motor-car Crankshafts. Renault Transfer Machine for Balancing ... 744
Type 999-A. Gear Finishing Machine Micro-Bar Micrometer Setting Height Gauge. P.V.E. ... 700	Milling Machine. Rouchaud & Lamassiaud Type FH 60C ... 471	Motor-car Pistons. Semi-automatic Production of ... 116, 172, 228
Micro-Mesh Magnetic Chuck. B. & S. Microbore Tools. The Production of ... 80, 452	Milling Machine. Russian-built 6M82 Universal ... 1325	Motor-car Transmission Spiders. Cross Trunnion-type Machine for Operations on ... 420
Micromat Hone Corporation: Type 5HXH-16 Horizontal Honing Machine ... 96	Milling Machine. Sankyo Cam-controlled ... 1410	Motor. Cincinnati Aeradrive-22 Low-speed Hydraulic ... 813
Micrometer Drive. A. Show-motion Accuread ... 782	Milling Machine. Somua Type CNZ Numerically-controlled ... 470	Motors. Changing the Speed of A.C. ... 527
Micrometer Height Gauge. Amar ... 782	Milling Machine. TOS Kurim Type FEA 1A Slot ... 573	Motor Control Switch ... 418
Microroller Roller. Burnishing Tool. B.T.G. ... 680	Milling Machine. "Vernier" Type 1160 A ... 469	Motors, Starters for Squirrel Cage Mould, Ferrostatics 8-impresion, for Production of Guttering Joints in Rigid P.V.C. ... 780
Microscope. Hilger & Watts Surface Finish ... 291	Milling Machines. Pegard Horizontal Boring and ... 1138	Mould-filling Equipment. Morris ... 952
Midarm Instrument for Measuring Rotation Rates with Great Sensitivity ... 816	Milling, Report on Contour ... 1321, 1335, 1459	Mould-making Techniques. Modern Investment ... 620
Middlesex Tool & Gauge Co., Ltd.: Opening of Extensions to Works Unit Heads and Indexing Table ... 1028	Mills, George, (Engineers), Ltd.: Fielding 800-ton Hydraulic Press for Production of Upset Forging Milwaukee-Matic. Application of Kearney & Trecker ... 1280	Mould for Production of Electrical Parts Incorporating Fox & Offord Universal Bolster ... 686
Midley & Sutcliffe, Ltd.: Richmond 2-in. Capacity Tape-controlled Drilling Machine 730, Midaw Bandawing Machine. Set-up for Simultaneously Cutting Two Blocks of CIBA Aeroweb Metal Honeycomb on a ... 325	Mining Engineering Co., Ltd.: Apprentice School ... 730	Moulding Machine. Composite, for Operating Shaw Process. "Foundry Equipment" ... 354
Milking Machines. Precision Stainless Steel Castings for ... 133	Miniswitches. Craig & Derricott ... 588	Moulding Machine. Williams White Large-capacity Blow ... 858
Milling Attachment for Bridgeport Machines. Horizontal ... 591	Missile Component Produced by Band-sawing. Complex ... 318	Moulding Machine. New BIPOL Injection ... 1193
Milling and Boring Drilling Machine. Large Ingersoll ... 81	Missile. Fabrication of Tanks for the Saturn C-1 ... 641	Moulding Material. Maranyl Plastics Moulds. Autoclave for De-waxing Investment Shell ... 1372
Milling and Boring Machines. Urag-Hettich ... 1409	Missile Cases. Expanding Machine for Accurately Sizing ... 723	Moulds. Shaw/Cos Composites, In-line Transfer Machine for Producing ... 353
Milling Chain Block Wheels on a Hayes Tracemaster Machine ... 986	Missile. Some Typical Operations Involved in the Production of Bulkheads for the Atlas ... 580	Mountford, N. D. G.: Automation for Small-batch Production ... 1276
Milling, Contour, Time and Cost Comparisons for Electronic and Conventional ... 1321, 1335, 1459	Mitsubishi Electrolytic Die-sinking Machine ... 1413	Mounts, Barrymount Isolating Machine, Kendall & Gent Vertical Milling Machine Mounted on ... 1334
Milling, Contour. Economics of Electronically-controlled Machine Tools for ... 1321, 1335, 1459	Mitsubishi Gear Shaving Cutter Re-grinding Machine ... 1473	Mueller Gages Co.: Groove Checking Gauge ... 591
Milling Cutter. Galtona Wedgmill Face ... 778	Mitsui Precision Machinery & Engineering Co., Ltd.: Jidic 7 Jig Borer with Numerical Positioning Equipment ... 1360	Multi-purpose Machine. Vertical Contour-grinding and ... 1131
Milling Cutter Gang. Setting Equipment for ... 754	Miyano Hydraulically-operated Type UJ-150 Lathe ... 1293	Multiforge Horizontal Forging Machines. Etchells ... 1243
Milling Cutter Grinding Machine with Electrolytic Equipment. Automatic ... 644	Miyano Type NE-S16 Automatic for Forming and Cutting-off Operations on Bar Material ... 1300	Murray Mfg. Corp.: Application of Templet Steel Rule Dies ... 541, 740
Milling Cutter with Throw-away Tips. Dormer ... 1314	Mobile Unit for Dormer Products Model of Grinding Machine. Head Wooden ... 1324	Myford, Ltd.: MG 12-H Hydraulic Cylindrical Machine ... 1113
Milling Cutters. Miniature Centre Drills and End ... 903	Model for Press Tool Design. Visual Aid Instructional ... 517	
Milling Cutters with Throw-away Tips. Marwin Max-E-Con Face Milling and Drilling Machine. Special Renault ... 1345	Moes, Joh., & Zonen N.V.: Imperator Pillar-type Drilling Machine ... 200	N
Milling Fixture for Holding Several Parts ... 890	Molten Metal Delivered by Road. Mona-Hobson Tangential-feed Form Grinding Machine ... 546	N.V. Industries: Standard Unit Die Casting Machine Construction ... 998
Milling, Generating Spheres by, Using Throw-away-tipped Cutters Milling Heads. Ferro-Cut Unit ... 886	Mondiale Gallic 14 Centre Lathe ... 424	National Bending Machine Corporation: Zig-zag Web Bending Machine ... 648
	Monitoring System. New Remote Monks & Crane, Ltd.: New Bristol Premises ... 49	National Broach & Machine Co.: Shaveburr Gear-tooth De-burring Unit ... 422
	Monsanto Chemicals, Ltd.: Autoclave for De-waxing Investment Shell Moulds ... 1372	National Cash Register Co.: Finishing Components for Cash Registers by Vibration Deburring ... 1110
	Moore-Catmur No. 2 Jig Grinding Machine. Set-up on, for Finishing Apertures in a 1-in Thick Split Die ... 579	National Engineering Laboratory: Single Flank Electronic Gear Testing Equipment ... 1420



PAGE		PAGE		PAGE		PAGE	
	National Federation of Engineers' Tool Manufacturers' Dinner ...	1143	Nippei Type CGF-A 40/50 Angular Wheelhead Cylindrical Grinder ...	1297	Oliver of Adrian Automatic Face-mill Grinding Machine ...	644	
1326	National Physical Laboratory: Apprentice Prizegiving ...	1210	Nippei Type CGE 10/30 Cylindrical Grinder. Automatic Loading Equipment on ...	1296	Olympus Electronic Equipment for Visual Indication of Table Position of Jig Borer ...	1359	
	Basic Principles and Accuracy of Measurement in Relation to the ISO System of Limits and Fits ...	235	Noble & Lund, Ltd.: New Plano-milling Machine ...	1061	Omen Metal Products: Die Casting Brass ...	1253	
295	Conference on Accuracy of Industrial Measurement of Length and Diameter ...	235	Noise, Investigation into the Effects of, on Instruments ...	36	Omnimill Machine, Sundstrand 5-axis ...	1074	
	High-magnification Optical Projector ...	181	Noise, Reduction of the Effects of High-intensity ...	1406	Omnispeed Lathe. Demonstration of Turning on Elliott ...	215	
23	Machine for the Precise Measurement of External Diameter ...	295	Noralbryte Etching Process for Aluminium ...	1191	Operational Variables in the Die Casting Process—Their Analysis and Control ...	1479	
952	New Method of Measuring the Diameters of Balls to a High Precision ...	904	Norgren, C. A., Ltd.: "Miniature" Compressed Air Equipment ...	1316	Optical Comparator, Hestair Magnoptic 6/80 ...	994	
146	Slow-motion Micrometer Drive ...	1016	See also ...	980, 1220	Optical Gauge, Bausch & Lomb Type DR-25B ...	98	
	National Productivity Year ...	171	Norgren Units, Efficient Methods for Batch Production of ...	980, 1220	Optical Instrument for Measuring Paint-film Thickness ...	630	
1201	National Research Development Corporation: Ferbury Variable Speed Gear 533, ...	793	North American Aviation Inc. Investigation into the Effects of Noise on Instruments ...	36	Optical Masers ...	1106	
913	National Steel Corporation: Production Line for Bond-coating and Painting Galvanized Steel Panels ...	128	Norton Co.: 18- by 196-in. Roll Grinder ...	883	Optical Measuring Tools, Ltd.: The Importance of Roundness Measurement ...	218	
4	National Tube Division, United States Steel Corporation: Developments in Stainless Steel Tubing Production ...	249	Norton Grinding Wheel Co., Ltd.: 23 Aluminium Grinding Wheels ...	941	O.M.T.-Etamic Automatic Gauging and Sorting Machine for Valves ...	1128	
228	Nawide No. 151 Up-stroking Drilling Machine for Printed Circuit Boards ...	1262	Norton, Sir James Farmer, & Co., Ltd.: Automatic Centreless Bar Turning Machine ...	1114	Rotary Inclined Table ...	984	
420	Neill, James, & Co. (Sheffield) Ltd.: Eclipse No. 44 Multiple Hand Tool ...	294	Notching Press. Taylor & Challen High-speed ...	703	30-in. Rotary Table ...	1375	
813	Nelson, R.: Large Expanding-cutter Taper-boring Arrangement ...	474	Nu-Era Corporation ...	1416	See also ...	311	
527	New Britain Machine Co.: Chucking Machine Arranged for Rapid Setting Up ...	71	Numerical Control. Jameson Coordinate Drilling Machine with ...	1241	Optical Projector, Outrox Type MP 2 ...	831	
780	Newall Engineering Co., Ltd.: Building Machine Tools ...	1227	Numerical Control. Meddings 1-in. Capacity Turret Drilling Machine with ...	1193	Optical Projector. A High-magnification ...	181	
952	Newall Group Sales, Ltd. ...	1130	Numerical Control, O-M Vertical Boring Mill with ...	1354	Ordzhonikidze Link-line for Tractor Gearbox Shafts ...	253	
620	Newbold & Bulford Projector for Measuring Brinell Hardness Test Indentations ...	1069	Numerical Control Programming for Point-to-Point ...	521	Orienting Unit for Pistons. Automatic ...	173	
856	Newcast Foundries, Ltd. Extensions to ...	1204	Numerical Control. Wiring Terminal Panels under ...	361, 500	Ortino - Mechanical Type 1P-611 Tool-room Lathe ...	140	
	Newman Hender Group: Bellows-sealed Valves ...	876	Numerical Positioning Equipment. Osawa ...	1360	Orthomat Tape-controlled Drafting Machine ...	726	
354	News of the Industry: Bradford ...	380	Numerical Positioning Equipment. Jidic 7 Jig Borer with ...	1360	Osaka Frontmatic Type FLA 35 Lathe ...	1291	
888	Brighouse ...	47	Numerical Positioning. Okuma Vertical Boring and Milling Machine with ...	1355	Osaka Special Vertical Boring Machine ...	1295	
1193	Bristol and District ...	1206	Numerically-controlled Bend-O-Matic Tube Bending Machine ...	1416	Osawa Numerical Positioning Equipment ...	1360	
765	Cheshire ...	1433	Numerically-controlled Drilling and Boring Machine. G.S.P. ...	307	Osborn Foundries, Samuel, Open Day at ...	1014	
1372	Derbyshire ...	1496	Numerically-controlled Drilling Machine. Renault ...	708	"Over-forming" of Skin Panels for Stabilizers ...	438	
	East Anglia ...	325	Numerically-controlled Drilling of Valve Plates ...	377			
353	Halifax ...	327	Numerically-controlled Milling Machine. Somua Type CNZ ...	470			
	Ipswich ...	275	Numerically-controlled Roll-grinding Machine. Farrel-Birmingham ...	993			
	Leeds and District ...	607, 963	Numerically-controlled and Special-purpose Machines. Economies Effected by the Use of, in Production of Components for Small Gas Turbines ...	1073			
1276	London 103, 215, 609, 735, 1024, 1495		Nuquip, Ltd.: Automatic Drain Valve for Air Lines ...	404			
	Manchester and District ...	856, 964	Flat Unions ...	1023			
	Midlands ...	495, 1142	Nut Splitter. JWP Hydraulic ...	1258			
1334	Newcastle-on-Tyne and District ...	1380	Nuts, G.G. Anchor ...	1143			
	Nottingham and District ...	382, 441	Nylon Captive Sealing Washers ...	1076			
591	Oldham ...	661	Nylon. Glass-filled ...	765			
	Redditch ...	1434					
1131	Rochdale ...	438					
	Scotland ...	216					
1243	Sheffield and District ...	1085, 1141					
	South, The 103, 215, 440, 489, 553, 610, 662, 791, 1024, 1096, 1326, 1495						
740	Stockport and District ...	1284					
	Tees-side ...	1025					
	West, The ...	913					
1113	Yorkshire 163, 214, 274, 496, 551, 734, 1205						
	Newton Abbot Engineering Co.: Cutting 3- by 1/2-in. Keyways in Heavy Drive Shafts ...	247					
908	Nib Taps for Nut Tapping Machines. C.E.J. ...	691					
	Nibbling Machine. Trumpf CN 900 Copy and Co-ordinate ...	165					
648	Nibbling Tool. Adel Hand-operated Nickel Steel for Use at Low Temperatures ...	89					
422	Nickols, L. W.: Basic Principles and Accuracy of Measurement in Relation to the ISO System of Limits and Fits ...	235					
1110	Nimonic Alloys. New ...	473					
1420	Nippei Shoe-centrefless Automatic Grinding Machine ...	1469					

PAGE		PAGE		PAGE	
Paton's, E.O., Electro-Welding Institute:		Plastics Material. Polymet Low-friction	1185	Press, Cowlishaw-Walker 150-ton Double-column Eccentric	704
Submerged Arc Welding with Strip Electrodes	350	Plastics Moulding Material, Maranyl Plastics & Resins, Ltd.: Production of a Clamping Fixture from Metolux Iron	262	Press, Cowlishaw-Walker 40-ton Inclined Power	1195
Payne Products International Ltd.: New Lapmaster 24-in. Lapping Machine	830	Plate Bending Machine. S.M.T. Universal	91	Press, Fielding 800-ton Hydraulic for Production of Unstamped Forgings	247
Pearlitch Malleable Iron. Machining Characteristics of	31	Platen Press. "Automatic Equipment" Air-operated	1198	Press, J. & S. Braunstone Air-operated	681
Pearson Machine Tool Co., Ltd.: VR Electro-hydraulic Guillotine Shears	1242	Plating Plant. Demonstration of the Glydo Automatic Transfer System as Applied to a	1489	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pea-Wee Type F 20 UE Universal Thread Rolling Machine	1081	Plating Plant, Efec-Udyllite Type C Barrel Zinc	301	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pegard, Ateliers Marcel: Horizontal Boring and Milling Machines	1138	Platt Bros. & Co., Ltd.: Fenner-Platt Centrifugal Clutches	520	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pels, Henry, & Co., Ltd.	368	Pliers. Consolidated Pneumatic Air Nip	356	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Penatron Spark Erosion Machine. B.S.A.	375	Pochon, J. J.: A Cold Rolling Process for the Manufacture of Gears	1362	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Perbury Engineering, Ltd.: Variable Speed Gear	533, 793	Polanyi Type Tensile Testing Machine	153	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Perfection Engineering, Ltd.: Transfer Honing Machine for Cylinder Liners	487, 556	Polishing Compound Remover, Budge-It	80	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Perkins Boilers, Ltd.: Patomatic Packaged-unit Steam Boiler	8	Pollard Bearings, Ltd.: Research and Test Facilities	809	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Perkins Export Engine, 1,000,000th Perkins, John M., & Smith, Ltd.: Mason Master Trepanning Hole Cutter	366	Polymathic Engineering Co., Ltd.: "Coolie Cub" Fork-lift Truck	835	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Perma-fog Lubricator. Miniature	849	New Coolie Pallet and Lift Trucks	732	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Permal 25th Anniversary	219	Polytechnic Unit Heads, Special Machine Incorporating	472	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Permeability Testing Equipment. Digital	1428	Polypenco, Ltd.: Polymet Low-friction Plastics Material	1185	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Perry, F. G. de B.: Perbury Variable Speed Gear	533, 793	Polysonic Ultrasonic Cleaning Units	891	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pfeifer & Sohne, G.m.b.H.: Type F 85 Horizontal Boring Machine	41	Pontiac Components. Some Applications of Ceramic Tools for Machining	4	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Phillips COs Welding Wire Pack	900	Poole, S. P.: New Method of Measuring the Diameters of Balls to a High Precision	904	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Photo-cell Receiver and Projector Housing. Wall-mounted	776	Portable Balers, Ltd.: Portable Motor-driven Transportable Baler	184	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Photo-electric Viewing Head, Electro-control Rectangular Housing for a	481	Position Indicator. Paramatic "Digital Follower"	357	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Photo-multiplier Tubes. E.M.I.	873	Positioning Equipment. Fujii Funac Automatic	1356	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pickavant, J. W., & Co., Ltd.: Hydraulic Nut Splitter	1253	Positioning Equipment. Jidie 7 Jig Borer with Numerical	1350	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pidofat 2-spindle Chucking Automatic. Set-up on Pittler, for Machining Gear Blanks	604	Positioning Equipment. O.sawa Numerical	1360	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Piercing Four Cross-holes, Schrader Automatic Air-operated Machine for	812	Positioning, Visual Table, Makino Jig Borer with	1359	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pinch Bending Rolls, Keetona Initial Pines Engineering Co.	593	Powder, Metal, Die for Producing a Duplex Gear. Japanese	1300	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Ram-type Bending Brake for Flat Stock	94	Powder Metallurgy. The Growing Importance of	619	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pipe Bending Machine. Staffa Type CFS Hydraulic	588	Powder Metallurgy. High-pressure Pump Cylinder Block Produced by Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pipes. Machine for Cutting Large-diameter Asbestos	811	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pipes. Set-up for Form Turning and Facing Resin-bonded	44	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pistons. Semi-automatic Production of	116, 172	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pitch Checking Instrument for Gears. Fellows No. STIM	652	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pitter Gauge & Tool Co., Ltd.: P.V.E. Micro-Bar Micrometer Setting Height Gauge	700	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pidofat 2-spindle Chucking Automatic. Set-up on Pittler, for Machining Gear Blanks	604	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Pivot Bearing. "Free-Flex" Cross-spring	910	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Planer-type Boring Machine. Graffenstaden Type AR 102A Horizontal Planing Machine. New S.M.T. Open-side	309	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Plano-milling Machine. Kotobuki	1412	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Plano-milling Machine. New Noble & Lund	1061	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Plano-milling Machine. Rockford Spartan Double-housing	1240	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Plasma Arc Flame Spraying Equipment. Metco Type 2MB	1226	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Plasma Arc and Gas Flame Processes. Comparison of Metal Spraying by the	1423	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Plasma Gun for Flame Spraying. New Arco Type PG 100	1049	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Plasmadyne Corporation: Surface-fusion Alloying Technique	1126	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381
Plastics. Blow Moulding Machines for, Williams White Large-capacity	888	Powder Metallurgy. Some Current Applications of	760	Press, Large U.S. Industries, built by Vickers-Armstrongs	1381

PAGE		PAGE		PAGE		PAGE	
706	Programming for Point-to-Point Numerical Control ...	521	Razdow Laboratories: Instrument for Measuring Rotation Rates with Great Sensitivity Re-equipment. The Growing Need for a Rational ...	516	Rilo-Detektor Leak Detector for Halogen Gases ...	70	
1198	Projector, Bathy No. 600 Optical ...	680	Re-equipment Policy. The Need for a Rational ...	923	Rims, Motor-car Wheel. Machine for Expanding ...	607	
347	Projector, Guxtrox Type MP 2 Optical ...	831	Re-grinding Machine, Mitsubishi Gear Shaving Cutter ...	1473	Rivet, Titanium Self-plugging Blind Riveting Machine, Autelca Type H100 Electro-magnetic ...	890	
681	Projector, Halliwell Mark 3 Profile Form Trace ...	784	Re-sinking Die Blocks with Carbide Cutters ...	425, 550	Road Delivery of Molten Metal ...	1246	
1381	Projector, Housing, Wall-mounted Photo-cell Receiver and ...	776	Re-turning Railway Wheels, Craven Pit-type ...	1431	Road Rollers, Graders and Dumpers. Production of Components for ...	894	
1312	Projector for Measuring Brinell Hardness Test Indentations. Enbeeco ...	1069	Reactor, Large Aluminium Plates for a New Daphne Research ...	98	Rockford Machine Tool Co.: Spartan Double-housing Planomilling Machines ...	1240	
1240	Prolite A-C Throw-away Tip Tool-holder ...	687	Recessing Heads, Westwood Automatic ...	370, 555	Rockwell Machine Tool Co., Ltd. Alpha 100-ton Die Try-out Press ...	704	
682	Propeller Production Costs Reduced by the Use of Modern Machine Tools ...	1181	Reclaiming Aluminium Chips at a Transmission Factory ...	1287	See also ...	70, 1144, 1241	
23	Propeller Straightening Press, S.M.T. Pryor, Edward, & Son, Ltd.: Air-operated Control Unit ...	959	Red Ring Crown Shaving Attachment, G.C.U. ...	1119	Roll Forging Machines, Eumuco Automatic ...	317	
704	Marking Machine for Bandaw Material ...	587	Red Ring Multiple Manifold-type Air Valves ...	1468	Roll Forging, The Production of Stepped Workpieces by Transverse ...	1219	
781	Production of Marking Punches and Dies ...	1096, 1186	Redman Tools & Products, Ltd.: Automatic Equipment for Producing Long Sheet Metal Components ...	1418	Roll Form Corrugating Machine, Scotts Airflow ...	92	
959	Special-purpose Machine for Marking Connecting-rods and caps ...	1206	Reed Rolled Thread Die Co.: Heavy-duty Thread- and Roll-forming Machines ...	538	Roll-grinding Machine, Farrel-Birmingham Numerically-controlled ...	993	
701	Type E.P. 40 Hydraulic Marking Press ...	781	Relay, Contronics Ultrasonic Sensing and Switching ...	581	Roll-grinding Machine, Norton 18-by 196-in. ...	883	
517	Type E.P. 60 Hydraulic Marking Press ...	420	Relay Pole Pieces, Solux Cybermetric Air Gauging Equipment for ...	416	Roll-turning Lathes, Swift Type DR ...	125	
76	Pulcom Diameter Measuring Unit, Delta ...	1296	Reliance Machine Products, Inc.: Electrically-operated Portable Height Gauge ...	1116	Roller Bearings, Some Aspects of the Manufacture of Pollard Standard ...	508	
689	Pulley, Bolland Chain, Machined at Works of Alworth Engineering Co. ...	164	Remington Rand Corporation: Gating of Aluminium Alloy Die Castings ...	1255	Roller Burnishing Tool, B.T.G.-Madison Microroller ...	680	
824	Pump Cylinder Block, High Pressure, Produced by Powder Metallurgy ...	506	Remote Monitoring System, New Renault Machine Tools (U.K.), Ltd.: Special Machine Tools for Washing Machine Production ...	1450	Rollers, Taper, Russian Machine for Inspecting ...	147	
1315	Pump, Torvac 618 Roots-type Mechanical Vacuum Booster ...	79	Special Milling and Drilling Machine ...	1345	Rolling Machine, Roto-Flo No. 3210 Vertical Serration ...	1065	
707	Pump Units, Produmatic Self-contained Hydraulic ...	359	16-station Transfer Machine for Hydraulic Pump Bodies ...	1348	Rolling Process, A Cold, for the Manufacture of Gears ...	1362	
1133	Pumping Corrosive Fluids ...	1050	See also ...	313, 708	Rolls Colston Appliances, Ltd.: Storage of Dishwasher Cabinets ...	440	
353	Pumps, Ferranti High-vacuum ...	104	Renault, Regie Nationale des Usines: Electro-mechanical Slide Assemblies ...	313	Rolls-Royce, Ltd.: Automation for Small-batch Production ...	1276	
1310	Punch and Die Made from D.B. Toolform Plastics Compound ...	1422	Transfer Machine for Balancing Motor-car Crankshafts ...	744	Barmax Fully-automatic Electrochemical Metal Forming Machine ...	1247	
1242	Punching, Knight Automatic Impact Punching, Automated Drilling and, of Printed Circuits ...	190	Rentagage, Ltd. ...	918, 1027	New Diesel Engine ...	968	
190	Punching Machine with Tape Control, Sheet-metal ...	729	Republic Aviation Corporation: Forming Sheet Metal Shapes by Freezing Water ...	1458	Roots-type Mechanical Vacuum Booster Pump, Torvac 618 ...	526	
1284	Pye, Ltd.: Machine for Operations on Containers for Radioactive Materials ...	817	Research and Application ...	339	Ropes, Steel Wire, for Hoisting Machinery and Lifts ...	1302, 1404	
140	Quadruplex Flame-cutting Machine, Schlechau ...	828	Research and Control Instruments, Ltd. ...	900	Ross, Donald, & Partners, Ltd.: Large Welding Manipulator ...	957	
1374	Qualitex-Dunod Usimu C2 TER Electro-erosion Machine ...	312	Research and Test Facilities at the Works of Pollard Bearings, Ltd. ...	809	Rotary Disc Feeder, Aylesbury Rotary Tables, New O.M.T. ...	1242	
1151	Quality Control System for a Tinning Line, Production ...	1478	Reviac Dial Gauge Thread Comparator ...	649	Rotation Rates, Instrument for Measuring, with Great Sensitivity ...	516	
1140	Standard Unit Die Casting Machine Construction ...	998	Rhodes Type S-2-150-72-36 Double-sided Crank Press ...	704	Roto-Flo No. 3210 Vertical Serration Rolling Machine ...	1065	
1165	"Quick Change" Drill Head, Zagar ...	192	Ribbed Rails, Melt-through Welding Employed for the Production of ...	627	Roto-Mike Marking-out and Inspection Fixture, Sorenson ...	368	
1382	Quickclamp Engravers' Vice, Euco ...	643	Richards, C.C.: Steel Wire Ropes for Hoisting Machinery and Lifts ...	1302, 1404	Roto-Mill Electronic Index Table, M. & M. ...	884	
1437	Rack Generating Machine, Sykes Type VR72B Vertical ...	957	Richards, George, & Co., Ltd.: 8-ft. Self-contained Circular Table Unit ...	1433	Rotors for Gas Turbines, Electron Beam Welding ...	1015	
1141	Radiators, Hedin Conveyor-fed Soldering Oven for ...	1422	Richmond 2-in. Capacity Tape-controlled Drilling Machine ...	730, 857	Rotunda, Ltd.: Reinforced Strapping Tape ...	148	
7	Radfi, Large, Set-up on a Bridgeport Machine for Milling ...	124	Ridge, W.G., B.Sc.: A High-magnification Optical Projector ...	181	Rouchaud & Lamassade Type FH 60C Milling Machine ...	471	
311	Radio Communication Systems Employed at the Factories of Timken Roller Bearing Co. ...	1121	Ridgway & Co. (Leicester), Ltd.: Set-up on a Bridgeport Machine for Milling Large Radial ...	124	Round the Shops with a Camera ...	246, 360, 579, 653	
78	Radioactive Materials, Machine for Operations on ...	817	Riley, Frank J.: Feeding Parts for Automatic Assembly ...	320	Roundness Measurement, The Importance of ...	218	
58	Radium-Chemie Tritium Luminous Compound for Dials ...	184			Series "3-Rute" ...	692	
293	Rails, Ribbed, Melt-through Welding Employed for the Production of ...	627			Routing Machine, Making Oil Grooves on a ...	13	
548	Railway Wheels, Craven Pit-type Lathe for Re-turning ...	1431			Routing Machines, Oil Grooving Routing Cutters, Clare "Long with Wadkin" ...	132	
1293	Ram-type Bending Brake for Flat Stock, Pines ...	94			Rowland, F.E., & Co., Ltd.: Machine for Cutting Large-diameter Asbestos Pipes ...	811	
187	Rams, Black's Gleamless Hydraulic Randall, James H., & Son, Ltd.: Randallak Stillage ...	813			Roy Type SP-1 High-speed 2-blow Cold Heading Machine ...	1261	
1251	Rasmussen Tube Gilling Machine ...	1120			Royal Ordnance Factory, Birtley: Further Developments in the Practice of the Cold Extrusion of Steel and Other Materials ...	1051	
					Rubert Electro-formed Surface Roughness Scales ...	689	
					Rubber-mould Process for Casting Zinc Alloy, Saunders ...	35	

	PAGE		PAGE		PAGE	
Rulon Spray Fluorocarbon Slipping and Anti-sticking Agent ...	611	Scotts Engineering (Newport), Ltd.: Airflow Roll Form Corrugating Machine ...	92	Shearing Machine for Coil Cutting Line, Bronx ...	382	
Russell Engineering Co., Ltd.: Visi-Aid Instructional Model for Press Tool Design ...	517	Scrap Shearing Machine, Eldair No. 2 Alligator ...	649	Shearing Machine, Eldair No. 2 Alligator Scrap ...	649	
Russian-built 6M52 Universal Milling Machine ...	1325	Scraper, Electric Hand ...	52	Shearing Machine, "Ferrous" Type GB 14 ...	832	
Russian Link-line for Tractor Gear-box Shaft Production ...	253	Screw Assembling Machine, Feldpausch Automatic ...	1417	Shears, Pearson VR Electro-hydraulic Guillotine ...	1242	
Russian Machine Tools at the Leipzig Spring Fair ...	139	Screw Head Slotting Machine, Ambressey ...	1377	Sheet Metal Components, Redman Automatic Equipment for Producing Long ...	1418	
Russian Machines for Operations on Camshafts ...	257	Screw Manufacturers' Association—Annual General Meeting ...	1210	Sheet Metal Machinery Co., Ltd. ...	39	
Rust-remover, Aci-Gel ...	35	International Meeting ...	1030	Sheet Metal Punching Machine with Tape Control ...	728	
Rust-resistant Files ...	1071	Screws and Bolts, Set-up for Producing, at Hogley Bros., Ltd. ...	661	Sheet Metal Shapes, Forming, by Freezing Water ...	1458	
<b>S</b>		Screws with Recirculating Ball Nuts, 40-ft. ...	1327	Sheffield - Ferranti Co-ordinate Measuring Machine ...	1429	
S.M.T. 150-ton Turret Press with Tool Pre-selection System ...	367	Scrivener, Arthur, Ltd.: Wickman-Scrivener Type 36 DPG Duplex Grinder for Brake Discs	87	Sheffield Twist Drill & Steel Co., Ltd.: Dormer Milling Cutter with Throw-away Tips ...	1314	
S.M.T. Open-sided Planer ...	590	Seal, Magnetic, for a Rotating Shaft Seam Welding Operations on Spherical Pressure Vessels ...	248	Mobile Unit for Dormer Products	272	
S.M.T. Propeller Straightening Press	959	Selwa Hobbing Machine with Hydraulic Crowning Mechanism ...	1475	Shell-Mex & B.P., Ltd.: Shell Moulds, Autoclave for De-waxing Investment ...	962	
S.M.T. Universal Plate Bending Machine ...	91	Selecting Change Gears, A Computer Programme for ...	348	Shell Moulds, Automatic Machine for Producing Shaw Refractory ...	351	
Sacem-Zipp Cutting-off Machines ...	1116	Seleromat Spark Erosion Machines, Boring and Profiling Head for ...	549	Shelley, M. L., & Partners, Ltd.: 12-spindle Drilling Machine ...	177	
Sainsbury & Parkinson, Ltd. ...	960	Selon Nylon Captive Sealing Washers, Dowty ...	1077	Shells of Revolution, Die-less Explosive Forming of One-piece ...	1123	
Sala, Luigi: Fully-automatic Cutting-off Machine ...	1194	Selson Machine Tool Co., Ltd.: Sensing and Switching Relay, Controls Ultrasonic ...	481	Shin Nippon Koki Horizontal Boring and Milling Machine ...	1410	
Salomé Synchronat Hydraulic Copying Lathe ...	74	Separating Machine, Unimag Magnetic Drum ...	787	Shin Nippon Koki Vertical Boring and Milling Machine with Cylindrical Columns ...	1410	
Samand Engineering, Ltd.: Type FG 4-station Universal Tool Grinder ...	537	Serration Rolling Machine, Roto-Flo No. 3210 Vertical ...	1065	Shin Nippon Koki Type RB-1A Vertical Boring Machine ...	1295	
Sanders & Forster, Ltd.: Installation of Zig-zag Web Bender ...	848	Servo-controlled Precision Gear Hobber, Akashi ...	1474	Shinbashi Tatsumi Type TD-C45 Automatic Lathe ...	1298	
"Sanderson Instruments" Dial Indicator Stand ...	889	Set-up on Archdale No. 2 High-speed Vertical Milling Machine at High Speed Service Tool Co., Ltd. ...	579	Shipton Engineering Co., Ltd.: Batch Production of Norgren Units ...	980	
Sandholme Iron Co., Additional Activities of ...	378	Set-up on a Bridgeport Machine for Milling Large Radial ...	124	Shock Absorber Components Produced by Powder Metallurgy ...	762	
Sandvik Swedish Steels, Ltd.: Coromant ER Treated Cemented Carbide Inserts ...	833	Set-up on Cincinnati Hypro Planomilling Machine for Milling a Locating Surface on a Machine Tool Bed ...	360	Shoe-centress Automatic Grinding Machine, Nippel ...	1469	
Sankey, Joseph, Ltd.: Checking Profiles of Wheel Sections, etc., on Hestair Magnoptic 6/60 Optical Comparator ...	994	Set-up for Cutting a 36- by 12-in. Universal Beam to Produce a 60-ft. Castellated Beam ...	532	"Shoebot" Speech Recognition Equipment ...	611	
Sankyo Cam-controlled Milling Machine ...	1410	Set-up for Form Turning and Facing Resinoid-bonded Pipes ...	44	Shotblast Helmet, Til-Lucent Translucent ...	350	
Sassex Boring Tools ...	862, 956	Set-up on Herbert No. 8 Preemptive Lathe for Turning Gas Turbine Components ...	360	Shotblasting Equipment, New Tilghmans ...	369	
Saturn C-1 Missile, Fabrication of Tank for the ...	641	Set-up on Planing Machine for Preparatory Rough Machining of Surface of Weld-fabricated Plastics Moulding Machine Bed ...	246	Shooter, B. A.: The Development of Circarc Gearing ...	134	
Saunders, N. (Metal Products), Ltd.: Rubber-mould Process for Casting Zinc Alloy ...	35	Set-up for Simultaneously Cutting Two Blocks of CIBA Aeroweb Metal Honeycomb on Midsaw Bandsawing Machine ...	325	Shoun Type KSA 500 Tool Dynamometer ...	1296	
Saut-du-Tara Type J3 C 320 Pillar-type Drilling Machine ...	310	Setting Equipment for Milling Cutter Gang ...	754	Shoun-Caseneuve HB 500 Centre Lathe ...	1296	
Savings of Inspection Time obtained with a Co-ordinate Measuring Machine ...	1429	Shaft Straightening Machine, Cargill-Detroit ...	1117	Shows Type SA 5 Lathe, Thread-whirling on ...	1296	
Saw Sharpening Attachment, Guys Circular ...	651	Shaping Machine, Elliott 10M High-speed ...	825	Sigma 31 Transistorized Electronic Comparator ...	678	
Sawing, Complex Missile Component Produced by Band ...	318	Shaping Machine, Gomel Type TM 36 Hydraulic ...	146	Simplimatic Machines, Machining Large Brake Drums on Gisholt ...	532	
Sawing Machine, Colbro 5-in. ...	1239	Sharpening Attachment, Guys Circular Saw ...	651	Simpson Drafting Unit ...	1071	
Sawing Machine, Cutlass Circular ...	1199	Sharpening Cutters for Die and Mould Copy-milling Machines, Kampf Type S-IV Bench-mounted Grinding Machine for ...	269	Sintercast Division, Chromalloy Corporation: Air Gauge Spindles made from Ferro-Tic C Machinable Carbide Drill Bushes of Ferro-Tic Sintered Machinable Carbide ...	1137	
Schichau, F., G.m.b.H.: Quadruplex Flame-cutting Machine	828	Shaveburr Gear-tooth De-burring Unit ...	422	Sintered Products, Ltd.: Some Current Applications of Powder Metallurgy ...	769	
Schrader's, A., Son., Division of Scovill Mfg. Co.: Automatic Air-operated Machine for Piercing Four Cross-holes ...	812	Shaw, Fred M.: Re-sinking Die Blocks with Carbide Cutters ...	550	Sizing Missile Cases, Expanding Machine for Accurately ...	723	
Schuler, L., A.G.: *Workpiece Transfer System ...	45	Shaw Process, Progress in the Mechanization of the ...	351	Skin Milling Machine, Chip Collection on a ...	186	
Schwartz, M.: Die Casting Brass ...	1253	Shear, Lamberton No. 6 Cold Billet Shear Line for Metal Strip, Vickers-McKaymatic Die ...	70	Skin Panels for Stabilizers, "Over-forming" ...	438	
Sciaky Bros. Inc.: Resistance-welded Ball-bearing Cages ...	1077	Shear, Sandholme-Scott No. 2 Alligator ...	378	Expanding Machine for Accurately Sizing Missile Cases ...	723	
Sciaky Electric Welding Machines, Ltd.: Automatic Welding Equipment for Finned Heat Exchanger Tubes ...	1192	Shearing and Cutting-off Units, Use of Hydraulic ...	727	Slide Assemblies, Renault Electromechanical ...	513	
Sciaky S.A., France: Spot Welding in Heavy Steel Construction ...	564			Slideway Grinding Machine, Uraga-Shibaura ...	1471	
Scottish Machine Tool Corporation, Ltd.: 150-ton Turret Press with Tool Pre-selection System ...	367			Slipping and Anti-sticking Agent, Fluorocarbon ...	611	
Open-sided Planer ...	590			Sloan Chemicals, Inc.: Aci-Gel Rust Remover ...	35	
Propeller Straightening Press ...	959					
Universal Plate Bending Machine	91					





	PAGE
Switching Relay. Contronics Ultra-sonic Sensing and ...	481
Sykes, W. E., Ltd.: Type VR72B Vertical Rack Generating Machine ...	957
Symonds, E. H., Ltd. ...	511
Symposium on Air Gauging ...	1083
Synchro-Turn Series Mark 50 Copy- turning Attachment ...	630
Synchromat Hydraulic Copying Lathe. Salomé ...	74
<b>T</b>	
Table, Air-operated Compound, C.S. Carburetors Type K 500-1 ...	832
Table, Hughes Co-ordinate Setting Work ...	594
Table, M. & M. 800 Roto-Mill Electronic Index ...	884
Table, O.M.T. Rotary Inclination ...	684
Table Unit, Richards 8-ft. Diameter Self-contained Circular ...	1433
Tables, New O.M.T. Rotary Taifun 380 Centre Lathe ...	1081
Tangent Cam, Design of the Tangential-feed Form Grinding Machine, Mona-Hobson ...	518
Tanks for the Saturn C-1 Missile. Fabrication of ...	546
Tap, Fluteless, Threading with a ...	64
Tape Control, Batch-production Under, at the Works of Boulton Paul, Ltd. ...	766
Tape Control, Sheet-metal Punch- ing Machine with ...	729
Tape-controlled Boring and Milling Machine, G.S.P.-Matic ...	99
Tape-controlled Centre Lathe. "American" ...	105
Tape-controlled Drafting Machine. Ekstrom Carlson ...	825
Tape-controlled Drafting Machine. Orthomat ...	726
Tape-controlled Drilling Machine. Richmond 2-in. Capacity ...	730
Tape-controlled Machine for Opera- tions on Machine Gun Turrets for Tanks ...	990
Tape, Dispensers for Pipe Sealing ...	89
Tape, Reinforced Strapping ...	148
Tape-mate Tape-controlled Punching Press ...	729
Taper-boring Arrangement. Large Expanding-cutter ...	474
Tappex Thread Inserts, Ltd.: Thread Inserts and L.G. Anchor Nuts ...	1143
Tapping Machines. Herber High-speed Tapping Machines. Medd & S. ...	1198
Tapping Machines. Medd & S. Special-purpose Drilling and ...	1245
Taps, C.E.J. Nib, for Nut Tapping Machines ...	601
Tarex (England), Ltd.: Demonstration of Tarex and Strohm Automatics ...	852
Tarex, S.A.: TF-2 Automatic Finishing and Second-operation Lathe ...	1018
Tatsumi Type TD-C45 Automatic Lathe, Shibashi ...	1298
Taylor, D.F., & Co., Ltd.: Reduction of the Effects of High- intensity Noise ...	1406
Taylor & Challen High-speed Notch- ing Press ...	703
Taylor, Hugh G.: Powder Metallurgy as a Produc- tion Technique for Mechanical Components ...	942, 1056
Taylor, Robert, Machine Tools, Ltd. ...	828
Taylor Stoker Lo-Hed Hoist, Use of, in Works of Goodyear Tyre & Rub- ber Co. ...	1043
Teaching Equipment, Videosonic ...	823
Teaching Machine for Paralyzed Students ...	261
Techné (Cambridge), Ltd.: Tecam (R) Fluidized Bath ...	1202
Teddington Aircraft Controls, Ltd.: Adjustable Air Gap Gauge ...	1199
Teddington Autocontrols, Ltd.: Dial-type Thermometers and Pres- sure Gauges ...	1055
Telcon Metals, Ltd.: Digital Permeability Testing Equipment ...	1428

	PAGE
Telephone Rentals, Ltd. ...	80
Telephone System, Internal, at Works of H. S. Cattermole (Hydraulics), Ltd. ...	967
Television Camera for Very High Temperatures. A.E.G. ...	86
Television in Industry, Some Appli- cations of Closed-circuit ...	463
Television Sets, Producing "Cable Preforms" for 302 ...	302
Television, Use of Closed-circuit, to Improve Accuracy in Operation of Large Boring and Milling Machine ...	81
Television, Use of Closed-circuit, at Works of Timken Roller Bearing Co. ...	1122
Telex System, Growth of ...	1416
Temple Industries Inc.: Application of Steel Rule Dies. 541, 740	740
Tensile Testing Machine, Polanyi Type ...	153
Terminal Panels, Wiring, Under Numerical Control ...	361
Termost Division, General Motors Corporation: Automation of the Die Casting Process ...	1252
Teroy Concessionaires, Ltd. ...	662, 956
Test Cabinets, B-W High/low Tem- perature Environmental ...	1112
Tester, Goulder N. 3V Lead, for 24-in. Gears ...	891
Tester, Matrix Circular Division ...	677
Testing of Coil Springs, Setting the Camshaft of Special Machine for Testing Equipment, Digital Permea- bility ...	1428
Testing Equipment, NEL Single Flank Electronic Gear ...	1420
Testing Machine, Denison Type T54 Combined Creep and Fatigue ...	1064
Testing Machine, NPL Slipping- clutch Fatigue ...	153
Testing Machine, Polanyi Tensile Type ...	153
Testing and Sorting Cartridge-type Fuses, U.S. Industries Equipment for ...	497
Testing of Swiss Watches, Com- pulsory ...	265
Testing Units, Probat Torsion ...	1374
Testing, Vibration, Machine Tool Elements ...	1236
Tests, Cutting, with Doall Bandsaw Blades ...	486
Thermometers and Pressure Gauges. New Teddington Dial-type ...	1055
Thermoweld Welding Process ...	488
Thoma Machinery Supplies, Ltd. ...	472
Thompson-Ramo-Woolridge, Inc.: Orthomat Tape-controlled Draft- ing Machine ...	726
Thread Comparator, Revlac Dial Gauge ...	649
Thread Grinding Machine, Moscow Type MB 13 ...	146
Thread Inserts, Tappex ...	1142
Thread Milling Machine, Lees-Brad- ner Type HH Mark III-C Hobbing and ...	592
Thread- and Roll-forming Machine. Reed Heavy-duty ...	538
Thread Rolling Heads, Herbert/ Fette ...	966, 1060
Thread Rolling Machine, Landis Lan-Nu-Rol Automatic ...	777
Thread Rolling Machine, Pee-Wee Type P20 UE Universal ...	1081
Thread Rolling Machine with Vibra- tory Feed, Waterbury Farrel Flat- die ...	108
Thread-rolling Machines, Tsugami Type 15-D 15-ton ...	1209
Thread-whirling on Showa Type SA5 Lathe ...	1298
Threading Exhibition, Herbert ...	777
Threading with a Fluteless Tap ...	64
Threading Machine, Landis-Maiden Junior MB ...	1374
Threading Machine Set Up for Form Turning and Facing Resinoid- bonded Pipes, Heap ...	44
Threading Machine, Snow Type TR- 4 Vertical Spindle ...	1263

	PAGE
Threading Techniques, Demonstration of ...	1021
Throw-away Clamped-tip Tools ...	772
Throw-away Tip Toolholder, Prolite A-C ...	687
Throw-away Tips, Dormer Milling Cutter with ...	1314
Throw-away Tips, Edibrac Dualock Turning Tools with ...	962
Throw-away Tips, Marwin Max-E- Con Face Milling Cutters with ...	698
Thru-feed Barrelling Equipment. Almco ...	1066
Thrust Bearings, Glacier Tilting Pad Thyratron, New AEI ...	290
Tilghman's, Ltd.: Airless Wheelabrator Cleaning Plant ...	970
New Shotblasting Equipment ...	369
Til-Lucent Translucent Shotblast Helmet ...	350
Time, Savings of, Inspection, obtained with a Co-ordinate Measuring Machine ...	1429
Timer, Donovan E.A.T.-10 Series Electronic ...	466
Timken Roller Bearing Co., U.S.A.: Communication Systems Employed at their Factories ...	1121
Tin Research Institute: Fusible Alloy Cores for Wave- guide Manufacture ...	1311
Tinning Line, Production Quality Control System for a ...	1478
Titan Non-ferrous Forgings, Produc- tion of, from Extruded Slugs and Castings ...	987
Titanium Self-plugging Blind Rivet Tokyo Delta High-speed Automatic Gauging Machines ...	890
Toimitt Gauges, Ltd.: Caliper-type Thread Gauge ...	1415
Toimont, F.R.: Machine for the Precise Measure- ment of External Diameter ...	103
Slow-motion Micrometer Drive ...	295
Tool Changing Arrangements on a Large Transfer Press ...	1016
Tool Changing Attachment, Edlund Automatic ...	21
Tool and Cutter Grinding Equip- ment, Vickerman ...	539
Tool, Eclipse No. 44 Multiple Hand ...	1197
Tool Pre-selection System, S.M.T. 150-ton Turret Press with ...	294
Tool Setting, Heald Tool-Tronic Indi- cating Equipment for ...	367
Tool-Tronic Indicating Equipment for Tool Setting, Heald ...	40
Toolform Plastics Punch and Die D.B. ...	40
Toolholder, Prolite A-C Throw-away Tip ...	104
Tooling & Equipment Engineers (Manufacturers), Ltd. New Works of ...	687
Toolmasters Diaform No. 14/1 Dressing Attachment ...	436
Tools, Cast, Advantages Obtained from the Use of ...	686
Tools, The Production of Micro- bore ...	436
Tools, "Throw-away" Clamped-tip Toolworks, Ltd.: Die Handler and Tryout Press ...	60, 453
Transfer Equipment for a 100-ton Press ...	177
Torque Converter Covers, High-speed Turning of ...	1029
Torque-master Dial-reading Torque Wrenches ...	1318
Torrington Mfg. Co.: Verti-Slide Forming Machine ...	364
Torsion Testing Units, Probat ...	1132, 1264
Tosvac, Ltd.: 618 Roots-type Mechanical Vacuum Booster Pump ...	509
TOS Hostivar Twist Drill Grinding Machine ...	1374
TOS Kurim Type FEA 1A Slot Mill- ing Machine ...	576
TOS Povazske Strojarnie Toolroom Lathe ...	573
Toshiba Machine Co., Ltd.: Uruga-Shibaura Slideway Grind- ing Machine ...	575

PAGE	PAGE	PAGE	PAGE
1021	Toyo Cylindrical Grinding Machine	1470	Taugami Type 15D 15-ton Thread-
772	Toyo T-512 Double-ended Fine-		rolling Machines
	boring Machine	1412	Tube-bending Machine. Numerically-
687	Toyo Haguruma Machine for Cutting		controlled Bend-O-Matic
1314	Spiral Bevel Gears	1476	Tube Drawing. Ultraasonic
962	Tracemaster Machine. Milling Chain		626
	Block Wheels on a Hayes	1120	Tube Gilling Machine. Rasmussen
962	Tractor Gearbox Shafts. Russian		573
962	Link-line for Production of		Tubes. E.M.I. Photomultiplier
962	Training. Government Proposals for		Automatic Welding Equipment for
	Industrial	1192	Pinned
1066	Training. Industrial—M.T.T.A.		1447
1315	Statement		1435
200	Training Scheme for Student Engi-		249
	neers. ABE Project	50, 322	Tungsten-Inert-gas Technique. Spot-
	Transfer Equipment for a 100-ton		720
	Press	1315	Tunnel. Boeing West Wind
970	Transfer Honing Machine for Cylin-		833
369	der Liners. Perfection	487, 556	Tuplin, W.A., D.Sc., M.I.Mech.E.: Some Details in the Design of the Simple Epicyclic Gear Train
350	Transfer and Loading Arrangements Employed by Vauxhall Motors, Ltd., Automatic	116	217
1429	Transfer Machine for Balancing		871
	Motor-car Crankshafts, Renault	744	Turbine Blades. Built-up Dies for Trimming
466	Transfer Machine. Diederichsen Rotary	121	
	Transfer Machine for Hydraulic	1348	Turbine Components. Set-up on Herbert No. 8 Preoperative Lathe for Turning Gas
	Pump Bodies. Renault 16-station	360	
	Transfer Machine. In-line, for Pro-		707
	ducing Shaw/Co Composite Moulds	595	Turbine Shafts. The Production of, by Shear Spinning
1121	Transfer Machine for Operations on		737
	Brass Socket. Meddings Rotary	353	Turbines. Producing Components for Small Gas
	Transfer Machining of Die Cast	1073	
	Aluminium Typewriter Frames	707	Turner 15-ton 12-station Turret Press Turning Attachment, Copy, Synchro-Turn Series Mark 50
1478	Transfer Methods for Magnesium	830	
	Automatic Metal		Turning, Form, Set-up for, and Facing Resinoid-bonded Pipes
	Transfer Press. Baird Type 5L 40-ton	44	
	Transfer Press. Pressen & Scheren-	540	Turning Hemispherical Forms. Hep-
987	bau Rofurt		worth Copying Equipment for
890	Transfer System. Demonstration of	962	Turning Tools with Throw-away Tips. Edibac Dualock
1415	the Glydo Automatic		364
	*Transfer System. Workpiece		Twist Drill Grinding Machine. Bergstrom Universal
103	Transfer System. Lark II Portable Weld-		884
	ing	1109	Twist Drill Grinding Machine. TOS Hostivar
	Transmission. Producing the West-	1392	
	inghouse Automatic	1336	Twist Drill Grinding Machine. ZB Mark 2
295	Transmission Spiders. Cross Trun-		1317
	nion-type Machine for Operations	383	Twist Drill Point Grinder. Windo-
21	on Motor Car		1146
	Transmission Valves. Automated	77	Twist Drills. B.S.A. Golden Arrow High-speed Steel
539	Vibratory Finishing of		786
	Transport of Huron Milling Machine	914	Two-spindle Machine for Operations on Compressor End Covers. Ex-
1197	by Air	1072	Cell-O
294	Transporter. Autotest Machinery		589
	Traverse-reversing Mechanism. An	544	Two-way Machine. Ex-Cell-O Special-purpose
40	Adjustable	1063	Typewriter Frames. Transfer Machining of Die Cast Aluminium
40	Traverse Unit for Paint Spraying.		
	Berridge Vertical		U
104	Travis, F.W. (see Prof. W. Johnson)		U.K. Optical Bausch & Lomb, Ltd.
	Trend Industrial Equipment, Ltd.: Rack-feed Magnetic Drill Stands	1116	94
	Trepanning Hole Cutter. Mason	366	U.S. Industries Inc. Great Britain, Ltd.: Equipment for Testing and Sorting Cartridge-type Fuses
687	Master		497
	Tressler, G.W.: Production of Non-ferrous For-	987	High-energy-rate Forging Machines
	gings from Extruded Slugs and	1296	Teaching Machine for Paralyzed Students
436	Castings	104	251
14/1	Tri-Metron Measuring Head		U.S. Industries Press Built by Vickers-Armstrongs. Large
688	Trimming Tool, Edge, De-burring and		1381
439	Trimming Turbine Blades. Built-up	874	U.S. Machine Tool Exports 333, 501, 1146, 1498
60, 483	Dies for	995	U-bolts. Wild Barfield Machine for Forming
773	Trimming Unit for Removing Strip		1301
	Ends. Rotary	184	Udal, J. P., Ltd.: Type MA-48-12 Air-operated Transportable Conveyor
1039	Tritium Luminous Compound for	931	705
1533	Dials	429	Udaveyor Mobile Conveyors
364	Trolley to Facilitate Patrol Inspec-		1421
	tion	482	Ukrainian Academy of Sciences: Submerged Arc Welding with Strip Electrodes
1132, 1286	Trolley. The Mega Industrial		350
	Trowal Vibrator Units for Finish-	831	Ultrasonic Deburring Equipment. Powertone
586	ing Metal Parts	835	
1374	Troxler & Co.: Gutroff Type MP 2 Optical Pro-	732	Ultrasonic Industries, Inc.: Polysonic Ultrasonic Cleaning Units
	jector	630	Ultrasonic Sensing and Switching Relay. Contronics
526	Truck. "Coolie Cub" Fork-lift	1070	626
	Trucks. New Coolie Pallet and Lift	165	Ultrasonic Tube Drawing
	True-Trace Corporation:		283
	Synchro-Turn Series Mark 50		Unimat Magnetic Drum Separating Machine
576	Copy-turning Attachment		826
	Trumeter Audio-activated Equip-		
573	ment for Counting		Unimate Single-spindle Automatic
573	Trumpf CN 900 Copy and Co-ordi-		
	nate Nibbling Machine		
573	Trunnion-type Machine for Opera-		
	tions on Motor Car Transmission		
1471	Spiders. Cross		
	Unimate Programmed Manipulator for Die Castings	1251	
	Union Carbide, Ltd.: Flame Plating Honing Mandrels	1238	
	Unions. Nuquip Flat	1023	
	Unit-construction Jig and Fixture Services. East German	340, 663	
	Unit Die Casting Machine Construc-		
	tion. Standard	998	
	Unit Heads and Indexing Table. M.T.G.	42	
	Unit Heads. Special Machine In-		
	corporating La Polymecanique	472	
	Unit Milling Heads. Ferro-Cut	886	
	United States Steel Corp.: Developments in Stainless Steel Tubing Production	249	
	Universal Drafting Machine Corp.: Orthomat Tape-controlled Drafting Machine	728	
	Uraga-Shibaura. Slideway Grinding Machine	1471	
	Uraga Tamashima Diesel Kogyo Co., Ltd.: Uraga-Hettich Milling and Boring Machine	1409	
	Urquhart, Scot, Ltd.	1116	
	Usimac C2 TER Electro-erosion Machine	312	
	V		
	Vacvac Control Equipment, Ltd.: Assembling a Stator and Drag Cup for Tachogenerator	1086	
	Vacuum Booster Pump. Torvac Roots-type Mechanical	526	
	Vacuum, Ferranti High, Pumps	1050	
	Valve, Automatic Drain, for Air Lines	404	
	Valve Bodies and Plugs. Boneham & Turner Machine for Boring and Turning	538	
	Valve Plates. Numerically-controlled Drilling of	377	
	Valves. Automated Vibratory Finish-	263	
	ing of Transmission	374	
	Valves. Martonair S.1600 Series Air Valves. Newman-Hender Bellows- sealed	876	
	Valves. O.M.T.-Etamic Automatic Gauging and Sorting Machine for Valves. Red Ring Multiple Manifold- type Air	1488	
	Van. Brierley Demonstration	1146	
	Van Moppes Dlatrim Dressing Tools for Grinding Wheels	849	
	Variables, Operational, in the Die Casting Process—Their Analysis and Control	1479	
	Vaughan Associates, Ltd.	1133, 1144	
	Vauxhall Motors, Ltd.: Semi-automatic Production of Pistons	116, 172, 228	
	Vee-lock Production Vice	419	
	Venezky, R.: Automated Drilling and Punching of Printed Circuits	190	
	Verdict Type T500 Dial Indicator	779	
	Vernier Calipers. Making Parts for	800, 924	
	"Vernier" Type 1160A Milling Machine	469	
	Vero Hydro-Copier Hydraulic Copy-	961	
	ing Attachment	679	
	Vero Machine for Copy-milling Sprocket Components	1312	
	Verson Allsteel Press Co.: Large Verson-Wheelon Hydraulic Forming Press	593	
	Verti-Slide Forming Machine. Tor-	248	
	ington	721	
	Vessia. Seam Welding Operations on Spherical	594	
	Vibrashen Vibratory Finishing Machines. Alimco	482	
	Vibration Deburring. Finishing Com-		
	ponents for Cash Registers by		
	Vibration Testing Machine Tool Elements		
	Vibration, Ultrasonic, as an Aid to Machining		
	Vibrators. Developments in the Application of Lacromatic, for Finishing Metal Parts		





	PAGE		PAGE		PAGE
Vibratory Feed, Waterbury Farrell		Web Bending Machine, Zig-zag	648	Wild Barfield, Ltd.:	
Flat-die Thread Rolling Machine		Wedgmill Face Milling Cutter,		Machine for Forming U-bolts	1301
with	196	Galtona	778	Wilkins & Mitchell, Ltd.:	
Vibratory Finishing of Transmission		Weldall & Assembly, Ltd.:		100-ton Press with 6-station	
Valves, Automated	263	Eldair No. 2 Alligator Scrap		Transfer Equipment	1315
Vice, Euco Quickclamp Engravers'	643	Shearing Machine	649	Williams Research Corp.:	
Vice for Milling Machines, Spenklin		Welded Ball-bearing Cages, Resist-		Electron Beam Welding Rotors for	
Hydraulic	197	ance	1077	Gas Turbines	1015
Vice, Vee-lock Production	419	Welder, Henes Water	1203	Williams White Large-capacity Blow	
Vickerman, W. S.:		Welding Aluminum by the Tungsten-		Moulding Machine	888
Tool and Cutter Grinding Equip-		inert-gas Technique, Spot	720	Wilson, R. E.:	
ment	1197	Welding, Electron Beam, without		Re-sinking Die Blocks with Carbide	
Vickers-Armstrongs (Engineers), Ltd.:		Vacuum	1180	Cutters	425
U.S. Industries Press Built at		Welding Equipment, Federal-Warco		Wind Tunnel, Boeing Wet	833
Scotwood Works	1381	400-cycle Resistance	95	Winhall-Rogers, Ltd.:	
Vickers-McKaymatic Die Shear		Welding Equipment, Sciaky Auto-		Die Handler and Tryout Press	1029
Line for Metal Strip	70	matic, for Finned Heat Exchanger		Winslow Product Engineering Corp.:	
Victor, Vauxhall, Semi-automatic		Tubes	1192	Winslo-Matic Type 100-C Auto-	
Production of Pistons for the		Welding in Heavy Steel Construction,		matic Twist Drill Point Grinder 97,	388
	116, 172, 228	Spot	564	Winstones, Ltd.:	
Videosonic Teaching Equipment	823	Welding with Lasers, Experimental	1188	Printing Roller Works at Harefield	149
Viewing Head, Elcotron Rectangular		Welding Machine, Brown Boveri		Wire Drawing Attachment, Ajax	
Housing for a Photo-electric	480	Large Capacity Programme-		Hogue Double-draft	886
Villiers (Tool Developments), Ltd.	200	controlled Spot	187	Wire Measuring, Cutting and Strip-	
Vital-Aid Instructional Model for		Welding Machine, Large Electro Slag	820	ping Machine, Artos Automatic	305
Press Tool Design	517	Welding Machine for Motor-car Body		Wire Pack, New Philips CO <sub>2</sub> Welding	900
Vollmerwerke Maschinenfabrik		Sub-assemblies, Steelweld Auto-		Wire Ropes for Hoisting Machinery	
G.m.b.H.:		matic	1201	and Lifts, Steel	1302, 1404
Type FSM Automatic Cutter		Welding Machine, Sciaky Dial-feed		Wire and Strip Forming Machines,	
Grinder	199	Projection	650	Demonstration of	1027
		Welding Machines, Electro Mechan-		Wire-Wrap Tools	361, 500
W		Heat Type PR41 Projection	587	Wiring Boards, Equipment for	1286
W.E.L. Pressure Filters	790	Welding Manipulator, Large Ross	957	Drilling Complex Printed	
Wadkin, Ltd.:		Welding, Melt-through, Employed		Wiring Connections, Wrapped	361, 500
Rotary Table Milling Machine for		for the Production of Ribbed Rails	627	Wiring Terminal Panels under	
Light Alloy	1344	Welding Operations on Spherical		Numerical Control	361, 500
Router for Cutting Oil Grooves	132	Pressure Vessels, Seam	248	Woodruff & Stokes Co.:	
Walmet Alloys Co.:		Welding Process, Thermoweld	488	Miniature Centre Drills and End	
Advantages Obtained from the Use		Welding Rotors for Gas Turbines,		Mills	903
of Cast Tools	430	Electron Beam	1015	Woodward, Sheldon F.:	
Wales-Strippit Hole-punching Units	471	Welding, Submerged Arc, with Strip		Automatic Assembly of Electrical	
Wales-Strippit Sheet-metal Punching		Electrodes	350	Equipment	242
Machine with Tape Control	729	Welding Transformer, Lark II		Work-handling Equipment, Develop-	
Walker, G.:		Portable	1109	ments in	1275
Machining Internal Fins in Com-		Welding Unit, Henes Self-generating		*Work-holding Arrangement for a	
ponents for Heat Exchangers	28	Gas	1203	Gear Hobbing Machine	892
Walker, Geo., & Sons, Ltd.:		Welding, Vibration	594	Work-holding Fixture Assembly for	
Torvac 618 Roots-type Mechanical		Welding Wire Pack, New Philips CO <sub>2</sub>	960	Drilling Operations on Cylinder	
Vacuum Booster Pump	526	Wells, C. F., M.I.Mech.E.:		Heads, Dex Multi-spindle	848
Wallis Engineering Co. (Birming-		The Development of Circarc		Work Table, Hughes Co-ordinate	
ham), Ltd.:		Gearing	134	Setting	594
Autogil Type 100P Roll-feed Press	1199	Wells, W. I.:		Work Tables, Keir Automatic	
Walmsley (Bury), Ltd.:		Castings Characteristics of Zinc,		Indexing	93
New Foundry for the Production		Aluminium and Magnesium	1256	*Workpiece Transfer System	45
of Castings for Paper-making		Westinghouse Electric Corporation:		Wrapped Wiring Connections	361
Machinery	284	Optical Masers	1106	Wrenches, Torquemaster Dial-	
Walpamur Co., Ltd.:		Westinghouse-Hobbs, Ltd.:		reading Torque	1132, 1266
GWD 346 Cleaning and Degreasing		Producing the Westinghouse Auto-		Wuhan Heavy Machine Tool Plant,	
Liquid	824	matic Transmission	1336, 1392	Greasing a Lathe at the	551
Walterisation Co., Ltd.	1191	Westinghouse Research Laboratories:			
Walther, Carl Kurt, G.m.b.H.:		Ball Bearings for Dry Running	1189	Y	
Trowal Vibrator Units for Finish-		Westwood Machine Tool Co., Ltd.:		Yates, J. & P.	421
ing Metal Parts	482	Automatic Reconciling Heads	370, 555	Yorkshire Precision Gauges, Ltd.:	
Warnock, R. E.:		"Wet Wind Tunnel," Boeing	833	Type C Adjustable Miniature Snap	
Automatic Metal Transfer Methods		Wharton & Wilcocks, Ltd.:		Gauge	785
for Magnesium	1258	A Unit Construction Jig and Fix-		Yoshikawa Type YLC 400 Automatic	
Washers, Nylon Captive Sealing	1076	ture Service	663	Copying Machine	1294
Washing Machines, Producing Hot-		Wheel Sections, Checking Motor Car,		Yoshikawa YAC-260 Programme-	
point	1448	on Hestair Magnoptic 6/60 Optical		controlled Automatic Turret Lathe	1293
Watches, Compulsory Testing of		Comparator	994	Yttrium Nodular Cast Iron	646
Swiss	264	Wheelabrator Cleaning Plant, Special			
Water Engineering, Ltd.:		Tilghman Airliss	970	Z	
W.E.L. Pressure Filters	790	Wheels, Milling Chain Block, on a		ZB Mark 2 Twist Drill Grinding	
Water-hammer Process	1052	Hayes Tracemaster Machine	986	Machine	1317
"Water Welder," Henes	1203	Wheels, Railway, Craven Pit-type		ZC Series Matrix Mechanical	
Waterbury Farrell Foundry &		Lathe for Re-turning	1431	Clutches	1285
Machine Co.:		Whitney, W. A., Mfg. Co.:		Zagar "Quick Change" Drill Head	192
Arrangements for Improving		Hydraulic Shearing and Cutting-		Zeller Brand Tritium Luminous	
Accuracy in the Operation of Large		off Units	727	Compound for Dials	184
Machines	81	Wickman Machine Tool Sales, Ltd.:		Zig-Zag Web Bending Machine	648
Flat-die Thread Rolling Machine		Machining Large Brake Drums on		Zinc Alloy, Casting, Saunders	
with Vibratory Feed	196	Gisholt Simplicmatic Machines	535	Rubber-mould Process for	35
Watts, J. L., A.M.I.E.E.:		See also 89, 94, 422, 737,	769	Zinc Alloy Die Casters' Association:	
Changing the Speed of A.C.		Wickstead, Charles, & Co., Ltd.:		New Engineering Standards for	
Motors	527	Automatic Bar Feed Unit for		Die Castings	320
Watts Regulator Co., Ltd.:		Power-driven Hacksaw	882	Zinc, Aluminium and Magnesium,	
Miniature Perma-fog Lubricator	849	Wiggin, Henry, & Co., Ltd.:		Casting Characteristics of	1256
Waveguide Manufacture, Fusible		Corrosion-resistant Alloys for		Zinc Plating Plant, Efcu-Udylite	
Alloy Cores for	1311	Pumps	359	Type C Barrel	301
Waveguide Produced by Path En-		New Nimonic Alloys	473	Zwicky, G., (London), Ltd.	839, 895
gineering Co., Ltd.	1495				

